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Doctoral Students' Mentoring Experiences and Their Perceptions of the Impact on Research Behaviors: A Focus on Historically Black Colleges and Universities

Nadielka D. Bishop

North Carolina A&T State University

A dissertation submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department: Leadership Studies

Major: Leadership Studies

Major Professor: Dr. Comfort Okpala

Greensboro, North Carolina

2014

The Graduate School
North Carolina Agricultural and Technical State University
This is to certify that the Doctoral Dissertation of

Nadielka D. Bishop

has met the dissertation requirements of
North Carolina Agricultural and Technical State University

Greensboro, North Carolina
2014

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Nadielka D. Bishop

2014

Biographical Sketch

Nadielka D. Bishop was born in south Florida, where she spent many developmental years of her life. She moved to North Carolina in the 1990s and has lived there ever since. She is the youngest of four daughters born to Robert and Henrietta, both from Panama City, Panama.

Her educational awakening began at East Carolina University where she majored in English, receiving both her undergraduate and graduate degree. During this time she began her work as a writing consultant and site coordinator for the University Writing Center at ECU. While her academic studies were focused on creative non-fiction, fiction, and poetry, her professional life focused on instruction, rhetoric and composition. She was inducted into Sigma Tau Delta English honor society during her graduate tenure at ECU. It was during this time that she developed interests in student leadership, mentoring, and higher education.

After teaching English and Reading at Durham Technical Community College, Nadielka was accepted to North Carolina Agricultural and Technical State University. Here, she was part of the inaugural cohort of the Graduate School's Community of Graduate Scholars. She is also a Kennedy 4.0 Scholar and a member into Phi Kappa Phi honor society. She is also the recipient of the Leadership Studies Department Service Excellence Award. She has presented at the Southeastern Writing Centers Association in 2006, the National Council of Black Studies in 2013, and presided at the CAEP conference in 2013.

Dedication

This dissertation is dedicated to the Almighty Father, who made every last word possible by sheer grace. Miracle in. Miracle out. And when I think of how this process has been laced with His presence I can hardly contain myself. It is also dedicated to my amazingly supportive older sisters (Keysha, Nikki, and Roberta) and my incredibly inspirational parents (Robert and Henrietta). Finally, it is dedicated to Cassetta, Adsonia, Skip, Emily, Yukari, Leonard, Alan, Clifton, and Samuel (an Amadeus, God's beloved). I promised myself to honor each passing by *never* missing an opportunity to become a better person. I do hope this dissertation is a reflection of that promise.

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I show sincere appreciation for the Leadership Studies faculty. My mentors and peers across the program and across the country. I do appreciate the friendship that I am blessed with. I wish nothing but success to you all.

I further acknowledge my doctoral friends who are in their journey here at A&T and all over the United States. Each of you is just waiting in line to change the world.

Continued acknowledgement is given to the Posse. I will see you all at the beach.

My sisters in blue: you are appreciated.

Final acknowledgement is given to the Graduate School staff and assistants for their continued support and laughter as we have worked together over the past three years. Thank you.

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Abstract

Studies report that mentoring has a positive correlation with research development of doctoral students in higher education. Ten percent of Black doctoral degree recipients receive their education at Historically Black Colleges and Universities (HBCUs). Therefore, research mentoring at HBCUs should be examined. Understanding these environments can ensure diversity in higher education mentoring, tenured faculty positions, and research funding opportunities. This qualitative case study seeks to collect the research mentoring experiences reported by doctoral students at two HBCUs in the state of North Carolina and to report their perceptions of these experiences for characteristics relative to ten elements of Research Training Environment (RTE) Theory. One-on-one interviews and cluster/focus groups were used to allow participants from HBCUs in the state of North Carolina to share their perceptions of mentoring during their doctoral matriculation and whether or not they believe their experiences have had an impact on their research attitudes and abilities. Codes were created based on the characteristics of RTE theory. Nine of the ten characteristics emerged from the data collected. Member checking was utilized after analysis. Analysis was done using ATLAS.ti software. Interviews were transcribed and coded for emerging themes. Dominant outcomes from the conversations included mentee responsibility, anxiety and frustration about research, peer support and collaboration, a division of responsibility and opportunities, and reference to research as a guided journey. Future implications from this research include training faculty mentors to engage students in research efforts and to follow up on their efforts, implementing strategies that stress the importance of scholarship and industry, and enforcing or reinforcing collaborative research efforts among the doctoral student population.

CHAPTER 1

Introduction

Mentoring has been identified as an important agent of graduate student success in the university setting (Quarterman, 2008). The training of graduate students in their disciplines plays an important role in their academic and professional development. Positive attitudes and behaviors increase the likelihood engaging in research and pursuing research opportunities. And while Historically Black Colleges and Universities (HBCUs) have been lauded for their ability to create positive faculty-student relationships, an existing gap in literature does not address HBCUs and doctoral student research behaviors and attitudes. Research Training Environment (RTE) theory is a foundation to doctoral research development and has direct relationships to research attitudes and behaviors. An empirical collection of this information will add to the body of knowledge on faculty-student mentoring and provide more discourse in support for graduate student research training to help diversify research and higher education (Cohen, Friedman, & Zier, 2008).

Literature suggests that non-whites and minority-serving institutions, including HBCUs, are consistently underrepresented in research endeavors such as institutional funding and tenured faculty positions (Davidson & Foster-Johnson, 2001; Evans & Cokley, 2008; Matthews-Juarez, 2013; Sethna, 2011; Stuart, 2012). Though literature further suggests that interventions should be introduced to increase diversity in research (Matthews-Juarez, 2013; Reiser, 2003; Treadwell, Braithwaite, Braithwaite, Oliver, & Holliday, 2009), little research exists that targets the doctoral population of HBCUs; and a question still lingers concerning research behaviors among HBCU doctoral students. An existing perception is that graduate-level work requires self-leadership as the primary necessity for executing goals and maintaining efficiency, reaffirmed by social

cognition's attentions to mastery experiences and psychological/physiological state (Neck & Houghton, 2006). However, research training environments (RTEs) provide atmospheres for doctoral students that are shown to have a positive correlations with research behaviors, interest in research, and productivity (Kahn, 2001).

With racial and ethnic disparities occurring in economics, health care, education, and law enforcement, there is a need for a more diverse pool of professionals across disciplines. The overall progress of further diversifying this selection bank of scholars has increased, but sustained progress has not been made in neither disparities nor professional diversification (Noonan, Lindong, & Jaitley, 2013).

HBCU undergraduate degree recipients are documented as being a fundamental part of the professional pipeline from college to the work force (Nealy, 2009), but literature fails to show the impact of HBCU graduate students and graduate programs on academic development. Beyond tallying degrees awarded, literature fails to evaluate the research experiences of terminal degree programs at HBCUs. But with HBCUs awarding more Black doctoral degrees than any other institution in 2006 (Noonan et al., 2013; Palmer, Davis, & Thompson, 2010), these doctoral-granting institutions have the potential to use research to become the "decoder of disparities" (Nealy, 2009, p. 18).

While substantial literature exists to examine mentoring experiences (Eby, Butts, Durley, & Ragins, 2010; Ortiz-Walters & Gilson, 2005; Wang, Noe, Wang, & Greenberger, 2009), as well as quantitative studies on research attitudes (Baltes, Hoffman-Kipp, Lynn, & Weltzer-Ward, 2010; Chemers, Zurbriggen, Syed, Goza, & Bearman, 2011; Lev, Kolassa, & Bakken, 2010; Love, Bahner, Jones, & Nilsson, 2007), there stands few qualitative accounts on the perceived

expectations of mentorship in relation to research training from the graduate students' perspective.

A call for a qualitative approach to the perceptions of students' academic mentoring has emerged (Lev et al., 2010). Exploring the perceptions of doctoral students' research training by evaluating faculty-student mentoring experiences can provide insight to students' perceptions of their mentoring relationships, training environment, and the assumed effects on their abilities. These feelings towards the task impact execution, dedication, and interest in tasks (Bandura, 1997). It is therefore relevant to uncover HBCU students' perception of how faculty-student mentoring impacts their research training and begin the conversation that assists in strengthening the pipeline of underrepresented groups in research-focused, tenured, academic positions.

Mentoring Toward Self-efficacy

There is a notable link between self-efficacy and one's ability to complete or pursue the completion of certain tasks or processes (Bandura, 1989). There is also a strong and definite correlation between confident feelings towards a task and the increase in pursuits of endeavors and opportunities relative to that task (Bandura, 1997). RTE theory confirms that positive mentoring relationships increase the self-efficacy in research of doctoral students (Gelso, 1996, 2006; Gelso, Baumann, Chui, & Savela, 2013; Hollingsworth, 2000; Love et al., 2007; Mallinckrodt & Gelso, 2002; Phillips, Szymanski, Ozegovic, & Briggs-Phillips, 2004; Schlosser & Gelso, 2001). By extension, Bandura's concepts suggest that efforts that strengthen research self-efficacy can improve research interest and productivity.

Although first-hand mastery experiences are commonly pointed to as primary building blocks of research self-efficacy (van Dinther, Dochy, & Segers, 2011), studies suggest that non-whites and women tend to rely on vicarious experiences and social pressures to build self-

efficacy (Usher, 2009). In context with this research, students who receive feedback from perceived experts who indicate confidence in students' abilities, the students' attitudes about their research abilities are improved. This type of feedback which is critical and evaluative in nature, serves as a more stable building block for research attitudes than simple encouragement (van Dinther et al., 2011). Active influence of research behaviors doctoral students also impacts the research development of both faculty and student. Naturally the relationship between these co-existing limbs of the campus body calls for collaboration and development (Eby et al., 2010). Faculty-student research mentoring is one method of influencing research behaviors and attitudes. And university with high research activity attracts more funding for the school and its faculty/student population (Rip, 2011). Thus, the relevance of mentoring relationship's effect of research behavior is again supported.

Mentorship and training have a considerable and direct impact on the research activity of doctoral students. The experiences of the mentored graduate student is related to the dyads they create with an expert faculty during their matriculation (Gelso, 2006). Further examinations have been given to the nature of these relationships and the environment they create. Research Training Environment theory has ten elements that are divided into two categories: interpersonal elements and instructional elements. Interpersonal elements include training students in research using low-risk opportunities, support of students' personal research efforts, pointing out the social elements of research completions, and having faculty members serve as positive role models. Instructional elements include encouraging students to come up with research ideas that interest them, instructing students on a variety of research approaches, placing emphasis on the relationship between science and clinical practice, reminding students that all research is flawed,

exposing students to practice opportunities towards the end of their program, and instruction in research methodology and design (Gelso et al., 2013).

The Impact of Research Training Environment on Attitudes and Behaviors

RTE theory recognizes that in order to reduce the anxiety of novice researchers in doctoral programs, faculty must serve as mentors and role models. In these roles they are able to create collaborative efforts among the student body as well as interpersonally with students. Furthermore, mentors are able to provide valuable instruction that shapes the perceptions, attitudes, and beliefs of their students. Therefore, RTE theory is the pipeline by which research self-efficacy is achieved. With self-efficacy credited as a building block for execution (Bandura, 1997), HBCUs should examine any emergence of RTE theory in their programs in order to assess students' progress.

Research self-efficacy is a predictor in behaviors. The higher the self-efficacy, the more likely one is to complete a task (Bandura, 1997). Higher execution rates as a result of strong self-efficacy leads to production, and for a research university production is a part of building a strong reputation (Rip, 2011). RTE theory tests its tenets in relation to production, interest, and productivity. All of these stem from the Bandura's concept of self-efficacy. RTE theory recognizes that if mentors use their resources for the benefit of the development of the doctoral student population in regard to research, the self-efficacy of the novice research will strengthen (Gelso et al., 2013). This formula could be critical to HBCU sustainability, as well as critical to the developing researchers they serve.

While the relevance of HBCUs has been called into question in a "post-racial" United States, studies indicate that they continue to play a vital role in the educational advancement of Black Americans. Approximately half of Black women who go on to receive doctoral degrees

are products of HBCU undergraduate education (Nealy, 2009). Still, the completion of an undergraduate degree from a HBCU may demonstrate an effect on Blacks in doctoral programs; but literature fails to specifically highlight experiences in HBCU doctoral research training. If the reputation of the University is related to the graduate research it produces (Rip, 2011), it is in the best interest of the these institutions to consider ways to increase create atmospheres that develop adequate research skills, interests and behaviors among the population of students seeking research-based terminal degrees.

Many of the interventions presented in a research-enhancing environment require modeling, instructing and advising between an expert researcher and a novice researcher. The mentoring relationship between developing student researchers in a university setting and the faculty who teach them can prove a vital dyad in building positive attitudes towards research among the student body that they maintain after graduation (Gelso, 2006).

The perception of a university's reputation resting in the quality of research from its graduate faculty and students is reinforced in literature that examines the role of the research university and developmental opportunities for researchers in such settings (Gibbs, Boettcher, Hollingsworth, & Slania, 2012; Lewis & Simmons, 2010; Rip, 2011). The University of Florida graduate dean Dr. Henry Frierson declares, "The reputation of a research university is, in large part, measured by the excellence of its graduate faculty and graduate students." There are trends that suggest that research universities move towards providing services to groups, conglomerates, and communities beyond (and in conjunction with) university interests (Rip, 2011). Historically Black Colleges and Universities that are classified as research universities are also relevant in the general discussion to increase the production of funding and graduates who continue to pursue research after degree completion. By examining the influences on

research attitudes of a graduate student body, additional assessments can be made (Bieschke, 2006).

Statement of the Problem

Historically Black Colleges and Universities (HBCUs) make up approximately 3% of colleges in the Unites States yet manage to award 9% of doctoral degrees earned by African Americans (Brown & Davis, 2001; Palmer et al., 2010). Statistics are impressive, despite the comparatively weak support given to research personnel at such institutions compared to predominantly White universities (Stuart, 2012). In fact, the lack of support is credited for the underrepresentation of minorities in various educational populations including faculty and tenured positions in higher education and institutional and individual research funding recipients (Davidson & Foster-Johnson, 2001; Evans & Cokley, 2008; Sibulkin & Butler, 2011; Stahl, 2005; Treadwell et al., 2009).

Research further suggests that HBCUs are notorious for their ability to retain Black students and increase their sense of self-worth more than predominantly White colleges (Treadwell et al., 2009). This suggests that HBCUs have a superb capacity for student development through "nurturing," mentoring, interpersonal relationships and emotional support (Fountaine, 2012; Palmer et al., 2010; Treadwell et al., 2009) But concerns surrounding adequate mentoring, or lack thereof, has been credited with a decreased ability in placing people of color in faculty research positions (Dutta, Kundu, & Chan, 2010).

Not only can training and mentoring improve diverse scholars' research abilities (Love et al., 2007), but non-mainstream topics affecting specific cultural communities are more likely to be addressed (Dutta et al., 2010; Stuart, 2012). Deficiencies exist in the literature because few studies take into account the specialized mission at HBCUs (to educated Blacks in particular, but

not exclusively). The strength of nurturing that HBCUs are commonly lauded has not been directly addressed in conjunction with research training. Particular consideration should be given to the implication that non-whites rely on vicarious experiences and social pressures to build academic efficacy (Usher, 2009). Minority-serving institutions with research based-programs, graduate students interested in research, and higher education officials dedicated to diversity would benefit from this study.

Purpose of the Study

This study reports research mentorship experiences of doctoral students at two HBCUs and the effects these experiences have on research behaviors. The emotions towards ability and actions of developing those skills are impacted by one's perception of self-efficacy (Bandura, 1989b). Considering that social pressure and vicarious experiences (mentoring) contribute to attitudes and behaviors it can be predicted that mentoring should be examined. According to Gelso's (1996) research training environment theory subscales, training opportunities may include research modeling by faculty, providing graduate researchers occasions to conduct research without subjection to severe risks, teaching various aspects of research and scientific method (including encouraging students to develop their own research ideas based on students' interest). By examining the students' perceptions of experiences as a mentee based on RTE theory, students are able to discuss the influences of their environment and provide explication of faculty-student relationships. Mentoring relationships can include faculty-student relationships, advisors, and other members of the department that students consider to be academic coaches (Melanson, 2009).

Focused discussion of mentors' influence of research training environments at HBCUs can afford graduate students who benefit from the environment to evaluate the relationship

between expert and novice researchers. These mentoring relationships can be manifested in many ways: role modeling, coaching, counseling, and advising (Melanson, 2009). These relationships may also satisfy the vicarious and social aspects of self-efficacy building and subsequently influence interest in research, research productivity, and research attitudes and behaviors (Knight, 2012). To capture these experiences in such a specialized setting creates discourse that is currently missing and begins dialogue on how leaders can affect the neophyte researchers.

Considering EdD and PhD students receive "research/scholarship" degrees (according to the National Center for Education Statistics), this study's emphasis on research mentoring's effect of research attitudes and behaviors are strengthened. By choosing doctoral students at HBCUs ensures that the participation in the study is directly dependent on the participants' completion of original research (scholarly articles/dissertations).

Conceptually, by studying students' perceptions and experiences an additional analytical component to development is established. From the perspective of leadership, evaluation from student constituents satisfies a need. Both retrospective and prospective evaluation is necessary to provide additional discourse about faculty mentors' execution of the organizational mission (Edmonstone, 2013).

An additional layer of purpose stems from the lack of research studying the graduate students' experiences at HBCUs. Capturing the doctoral student perspective of how they build efficacy in their research process through faculty-student mentorship can assist HBCU administrations, graduate faculty, and student resource centers an empirical basis on which they can address the need by developing initiatives designed to supplement research culture. Ultimately there should be an examination of the relationship between mentoring experiences

and research attitudes and behaviors in students (Davidson & Foster-Johnson, 2001), and for the purposes of this study specifically, HBCU doctoral candidates. Exploring experiences of students can influence further attempts to explicate the university's leadership role in providing research support.

Expressive evaluation of leadership by their mentees currently in a program will provide a prospective approach to leadership development (Edmonstone, 2013). Though voice-exit strategy is a concept commonly used in managerial and business models, it contains a psychology applicable to higher education. The students, as constituents of the university organization, are likely to complete their commitment to the organization when they feel they have a voice wherever they belong. Without this voice, they are more likely to exit or not stay the course (Hirschman, 1970).

There remains a considerable lack of minorities in faculty positions at universities. Similarly, there is a lack of minority serving institutions that receive research funding, though not necessarily for lack of effort (Stuart, 2012). Research reports that mentoring has a positive correlation with research culture development in higher education (Schlosser & Gelso, 2001). Mentoring is a considerable part of doctoral student development; and Historically Black Colleges and Universities (HBCUs) are specifically heralded for their ability to develop and maintain strong faculty-student relationships (Palmer et al., 2010). Though several factors contribute to the issue of diversity in university faculty positions, a solution-oriented approach can be found in providing strong research training environments for doctoral students who may seek employment in higher education or research oriented work forces. The ten specific characteristics of RTE theory show strong correlates to research productivity, interest in

research, research behaviors and research self-efficacy/attitudes (Gelso et al., 2013). Therefore they should be considered in discussing the mentoring experiences of HBCU doctoral students.

Research Questions

The primary research questions guiding the focus of this study are as follows:

1. What are students' experiences with faculty-student mentoring?
2. How do their mentoring experiences affect their perception of their research attitudes and behaviors?
3. Have these mentoring experiences exhibited Gelso's traits of research training environment theory?

Definition of Key Terms

The following key terms will be used in this study:

1. HBCU/HBCUs: Historically Black Colleges and University/Historically Black Colleges and Universities: universities created between 1837 and 1964 with a specialized mission dedicated to the education of, but not exclusively, Black students.
2. Mentoring/mentoring: a multi-dimensional relationship between more experienced faculty and less experience graduate student in which faculty provides support and resources. Also referred to as faculty-student mentoring (Evans & Cokley, 2008).
3. Research Training Environments (RTEs): ten characteristics of a research environment said to impact doctoral students' relationship with research.

Delimitations

The researcher admits to the personal assumption that qualitative responses may indicate that external faculty-student mentoring influences intrinsic motivation, and that additional

leadership and resources from external systems contribute to building positive research attitudes and behaviors.

It should be remembered that focus on HBCU doctoral programs does not ensure that minorities and women will be the only informants, but HBCUs are much more likely to produce minority and female doctoral candidates than traditionally and predominantly White universities (Gasman & Jennings, 2006). Furthermore, focus on HBCUs can provide insight for administration and faculty to the importance of improving research culture among students (and assuming, consequently faculty) and placing such universities towards the front of the emerging trends in research production in the university.

Further consideration should be given to counter arguments that point to doctoral research and the ability to conduct it as a matter for basic human agency of mastery experiences alone. The complexity and specialty of research/scholarly doctorates automatically connotes a high level of mental capacity and ability (Baltes et al., 2010). Independent skill and critical analysis from the perspective of the candidate is required for the successful and meaningful completion of research. It must be remembered that the faculty-student mentoring relationship does not simply eliminate the need for first-hand mastery experiences of the research process.

The external social pressures and modeling experienced by students have been suggested to be stronger among students outside of the dominant racial group and women in developing research self-efficacy (Usher, 2009). To examine the perceptions and experiences of students in research environments at a specialized university can satisfy the common call in empirical research that implies a qualitative analysis of research self-efficacy is meaningful to development (Lev et al., 2010).

Role of the Researcher

Due to the natural proclivity of bias in humans, and because the researcher serves as the key instrument of data collection, the role of the researcher should be discussed. The researcher is a doctoral student at HBCU who is in the final stages of her dissertation research. Her past experiences include teaching community college students and working in student services in higher education. She is a first generation Black American and her family is from Panama City, Panama. As an African American doctoral student at the time of this research, she has lifelong companions of different races who are also in PhD in MD programs at different predominantly white institutions around United States. In sharing experiences with doctoral students of different ethnicities at different universities, the researcher had interest in various mentoring experiences. In recognizing the potential of biases influencing analyses, a researcher has increased awareness of such potential and is then capable of analysis with full awareness (Kohlbacher, 2006).

Organization of Research

The study is organized in the five-chapter research format. It began with an introduction to key concepts and a statement of the problem. The research highlights the significance of the problem by providing historical interpretations and analyzing literature to create a forecast for combating the stated problem. To ensure clarity, a literature review outlines the empirical and conceptual ideas that surround HBCUs relevance and production, mentoring, research training environments, and research behaviors. The methodology section of this research further discusses the interview protocol related to the research questions, while the discussion section of the research covers recurring themes and questions that branched off from the unstructured interviews of the focus group participants. The methodology chapter explicates and justifies the

sample population (HBCU doctoral candidates). The researcher conducted semi-structured interviews with focus groups that were designed to shape shared experiences and highlight emerging themes among participants. These interviews were analyzed and the findings informed discussions portion of this research. Finally, the findings are also discussed in context of existing literature on the subject. Implications for future research are made, based on the results provided.

CHAPTER 2

Review of the Literature and Theoretical Framework

Faculty student mentoring and its relationship to research attitudes and behaviors are prominent in literature. Research training environment theory and its relationship to mentoring are still under development. The theory requires for the environment to be set by the faculty of the department and consequently charges faculty to become mentors to doctoral student by providing this with support, information, and resources (Hollingsworth, 2000).

Because both emerging trends and historical responsibility calls upon HBCUs to nurture the research abilities of its students, it is also important to examine contributing factors and theoretical components that provide a framework for their experiences. Self-efficacy in research relates to social cognitive theory and defines self-efficacy as one's belief in their competency in task completion (Bandura, 1997). Theoretically, the interpersonal and instructional components of research training environment theory labels modeling, instruction, and encouragement as standard for research development (Gelso, 1996). Ignoring privileges of the dominant culture, HBCUs should consider evaluation of their systematic investigations through a historical and progressive lens.

Historically Black Colleges and Universities: The Past and the Emergent Trends in Universities

A study of mentoring experiences at HBCUs with an RTE framework does not seek to uncover or identify a disparity between research attitudes/behaviors at HBCUs versus Predominantly White Institutions (PWI); nor is it designed to compare the RTE score of one institution to the other (Brown & Yates, 2005). Independent of comparisons, the influences that steer research culture among HBCU students are independently important. Literature does

support claims that there are elevated successes and significant contributions from scholars who are undergraduate alumni of these specialized institutions (Avery, 2009; Knight, 2012). However, literature fails to discuss research issues that face graduate students in the context of the specialized mission of HBCU. While the importance of general graduate student research attitudes and behaviors are shown to be relevant, HBCU graduate students are underutilized research subjects. This suggests an exclusion of new researchers (Noonan et al., 2013) capable of addressing some of the overwhelming disparities that face African American demographics (Nealy, 2009). Paying closer attention to research culture and training is important for HBCUs who seek to build a significant research environment (Lewis & Simmons, 2010). In turn, the possibility increases for these newly trained graduate students to have the type of researcher's epistemology necessary to address disparity issues in the Black American community (Noonan et al., 2013).

It goes without saying that Black doctoral students are present in several types of academic institutions across the country. Likewise, it is not assumed that all doctoral students that attend HBCU are Black of African decent. The institutions, however, are charged with six specific responsibilities (Brown & Davis, 2001) introduced by Walter Allen:

- Maintaining the legacy and cultural tradition of HBCUs
- Ensuring there is relevant leadership for the cultural needs of the African American community
- Making sure the Black community functions economically
- Providing role models of African decent
- Ensuring those who graduate from such institutions are capable of addressing the needs of the Black community

- Creating Black agents capable of researching, teaching, and distributing findings that address all minority populations.

Brown and Davis (2001) continue highlighting HBCUs as agents of social capital. Since social capital includes formal and informal relationships and linkages, and HBCUs are responsible for the production of scholars capable of identifying needs as well as disseminating solutions, it is fitting for mentoring experiences to be collected to discover themes that may be specific to special missions at HBCUs.

A university's culture can be balance with the production of research (Rip, 2011). Research modeling by experts who value ethical execution of systematic inquiry should be nurtured, and additional development should be considered a priority to ensure that reputation remains positive. Mentoring experiences and socialization practices should do more than trickle down: there should be broad strokes of moral behavior that starts with the mentors (faculty, staff, and administration) and sweep across all other impressionable mentees. Whether formal or informal, it is important for socialization to take place in order to satisfy the social pressure element of social cognition. The Ferguson et al. (2007) study states that mentoring behaviors should be investigated since they do influence the research climate of a university. The means by which the research is completed is just as important as the outcome itself (Ferguson et al., 2007). Training is discussed in the content of socializing trainees towards morality in addition to generally understanding the significance of research.

Research universities have atmospheres in which new thought and ideas are encouraged and nurtured; however, they primarily rely on a business approach when making decisions about university interventions (Rip, 2011). With a top down approach, the majority of responsibility does lay on university leadership in creating additional "layers" of functionality. Rip (2011)

suggests that moving forward, universities will use research productivity to create corporate partnerships and enjoy benefits such as additional funding for projects, maintaining relevance, and ensuring the institutions future. The fundamental principle in this school of thought is that research is, in fact, being produced at a pace and with a quality that maintains and set a standard for the current community that surrounds the institution. While research institutions outside of higher education do threaten universities down the road, the threat for some HBCUs is more prevalent (Brown & Yates, 2005).

The relationship between research activity and university success is further implied in the conceptual thoughts of other scholars (Lewis & Simmons, 2010). A failure to nurture the importance beyond outcome-based measures puts universities at a critical disadvantage. The culture of research does not only benefit the researchers, but it enables topics that affect broader communities to be addressed from a variety of vantage points. Personal as well as organizational components affect a universities research culture, among them are proximity of relevant resources, rewards for accomplishments, and leadership (Lewis & Simmons, 2010). Leadership and mentoring are not addressed directly. Though the article does highlight philosophical frames that suggest social issues (i.e., poverty) can be addressed with a substantial research culture in place in university systems that exist in affected communities. With the resources available to a university, researchers in the scholarly environment bring global perspectives and solution to local issues. Lewis and Simmons also cited factors that exist from an organizational level. The factors serve as building blocks for research productivity and include goal setting, stressing the importance or research, establishing similar values, communication, and leadership. These factors are implemented from the top of the organization in order to influence culture.

Though professional disparities persist among Blacks in America, the HBCU is well documented for its unwavering ability to line the ranks of Black professionals with its undergraduate alumni (Stahl, 2005) as well as the development of a Black middle class population in America (Brown & Yates, 2005).

Influencing similar academic research successes through relationship development, particularly across cultures, can be difficult (Stahl, 2005). With research culture so imperative to universities, HBCUs could benefit from examining research mentoring in the context RTE. Varied approaches to addressing RTE in HBCUs can be researched, however the faculty-student mentoring and RTE theories integral role in research attitudes and behaviors make mentoring in the HBCU atmosphere a valid starting point.

The quantitative work of Fountaine (2012) set out to uncover the relationship between faculty-student interaction and Black doctoral students at HBCUs. Though survey results allowed for inferential statistical analysis (Creswell, 2012), expounding on experiences of the students with qualitative approaches could enhance the study.

There is a significant research pointing to the availability and use of resources (Walker, Howard, Washington, & Godley, 2007). The subsequent assumption to providing adequate research resources to students and ensuring that those resource are put to use, can further the causes that directly affect an under represented demographic. Providing students with opportunities to engage in mastery experiences is also a significant and well-documented aspect of self-efficacy. However, faculty-to-student mentoring appears to have a more definitive effect on students over time.

Research Self-Efficacy, Attitudes and Behaviors

The benefits of mentoring to improve research interests and behaviors are not solely awarded to the student and the institution. The students do gain the social cognition aspects of vicarious experiences and social pressure; but faculty again reported benefitting as well. Studies show faculty who encouraged research with mentees actually refined research ideas that went on to flourish into obtainable systematic studies (van Dinther et al., 2011). Though high levels of education achievement begin to suggest that self-leadership is paramount, institutions of higher education are capable of making a profound impact on students' general self-efficacy. This review of the literature shows that vicarious experiences (a building block for self-efficacy) provide mixed results in the quest to discover its correlation with efficacy development. However, verbal persuasion and support was often a tool used to influence efficacy in a positive way.

The role of efficacy and identity among underrepresented students is important to production. Another study depicts the necessity of research experiences and self-efficacy (Chemers et al., 2011). There are further claims that research efficacy has a relationship to the development of scientific careers. The three key variables tested were science self-efficacy, leadership, teamwork self-efficacy, and identity as a scientist. Methodology included inviting participants via email. With the results of this finding further evidence points to self-efficacy as an enhancer of academic development with a dependency on the identity of the student body being taken into account (Chemers et al., 2011). Existence of empirical links between identity and self-efficacy development provides further rationale for this dissertation.

Usher's (2009) qualitative study of self-efficacy also supported the need for more empirical research to examine sources of academic confidence and behaviors. The study's

purpose was to uncover which rules high school students used to form their self-efficacy in math. Usher's research questions flirted with the inclusion of gender factors in mathematic self-efficacy development (Usher, 2009). It was further revealed that while mastery experiences is still considered the most utilized source of self-efficacy, other racially based and gender specific research found that women and people outside of the culturally dominant color group point towards vicarious experiences and social pressures/persuasion as the most efficient sources of self-efficacy. To increase the likelihood of more realistic and well-rounded results (Creswell, 2012), the researcher conducted semi structured interviews with a mix of race and gender groups (African American girls and boys and White girls and boys). Informants were interviewed within the context of their self-efficacy scores; although the tool used to quantitatively measure these scores is not identified in the study (Creswell, 2012).

An exploratory study by James and Simons (2011) states the research problem as a lack of discourse in certain fields because of the lack of research efficacy among the graduate students. This again suggests graduate students as a viable source of scholarship capable of adding to various fields of study. The sentiments found in James's work highlights the need for increased research self-efficacy in order to continue and advance discourse in various disciplines (James & Simons, 2011). Finding suggest that efficacy is promoted by exposing graduate students who are not experts in the field to research as soon as possible in order to carry the torch of learning. The study used five different instruments in order to collect data. Research questionnaires asked of attitudes towards research, research self-efficacy, and research outcome expectations. The study also explored research training environment scales. A weakness of the article was the findings section. The article appeared to focus on the dissemination of information exclusively in the field of study but not necessarily the overall research-efficacy of

the students. However, this article begins to introduce the general marriage between research self-efficacy as a result of participation in positively rated RTEs. One of the challenges in literature on research self-efficacy is the proper application of the concept to a particular field of study (James & Simons, 2011). While the study attempts to use a variety of measures to find strong results for well-stated research questions (Creswell, 2012), James and Simon's introduced the concept of evidence-based practices for influencing student research self-efficacy and interest. In a similar study that also used the RSE scale (Lambie & Vaccaro, 2011), the research questions strongly focused on the extrinsic training of the students. This signifies the need for research focused on mentoring's role in building research self-efficacy among graduate students. Acknowledging that need in literatures adds to the justification of using non-traditional methodologies (qualitative) to achieve holistic results.

Additional research highlights the idea that both research and practice are necessary to have a successful career in psychology and counseling (Love et al., 2007). The article indicates four tenets of self-efficacy. Since performance and vicarious experiences are most common, the authors suggest gaining research experience is vital to self-efficacy and therefore vital to maintaining scholarship in the field of study. Clinical experiences are prevalent but research experiences are not as common. The methodology of the study excluded students who had already begun writing their doctoral dissertation. Data was collected via online surveys for this quantitative study. The qualitative methodology exhibited differences between individual research experiences and group research experiences. However, in comparison to the extensive quantitative information, the qualitative data seemed to lack definitive findings. Findings did reveal no true significance between the level of research self-efficacy among experienced and

inexperienced students (Love et al., 2007). This finding provides justification for a qualitative approach that includes novice student researchers at all levels of their academic matriculation.

Research continues to explain the importance and significance of research self-efficacy and RTE theory towards production (Baltes et al., 2010; West, Kahn, & Nauta, 2007). Major findings included correlations between research interests and research self-efficacy. West et al. provided insight on learning styles and demonstrated who they impacted some aspects of research self-efficacy. It was hypothesized that students with intuitive learning styles should score higher level in research self-efficacy than the other learning style students. It ultimately provides strong recommendations for more graduate research training (West et al., 2007).

Such training pays off. Lecturers at Australian universities identified as "non-published" less frequently if they had a doctoral degree (Hemmings & Kay, 2010). The findings also showed a strong correlative between research self-efficacy scores and scholarly output. Additionally, research reported that good advising experiences were linked to positive research self-efficacy among doctoral students (Schlosser & Kahn, 2007). With mentoring leaning on the theoretical frame of RTEs, HBCUs find an opportunity to gauge the research self-efficacy of the doctoral student population and predict the behavior of its future alumni.

Research Training Environments: Development and Theoretical Application

In Gelso's (1996) initial revision to the RTES, there were weaknesses uncovered previously not mentioned by the original theory. Most notably, the theory was revised to omit quantitative training as a factor in the RTE. In the revisions to the scale, instabilities have been reported among the Cronbach alphas of different factors. However, the factor "faculty modeling" has consistently reported a Cronbach's alpha over .80 over the past four decades. In revision of the RTE scale, Gelso's sample size included 173 doctoral students ranging from first-

year students to students beyond their fifth year of study (Gelso, 1996). Only two of the students identified themselves as Black. Collecting mentoring experiences at HBCUs with the framework of RTE can provide additional empirical analysis on HBCU graduate student research production and mentoring's impact on that production.

In further reference to Gelso's research, it could be relevant that schools, which specialize in the education of Black Americans, pay attention to the trends in developing useful RTE in respects to the development of research self-efficacy, interest, and productivity. The study hypothesized and reported a positive correlation between research self-efficacy (Self Efficacy Research Measure) and RTE-R. It is of note that final discussion numbers show the subscale of "faculty modeling" (conceptually relative to mentoring) consistently rank highest among respondents. Ultimately, the revision of the scale determined "it makes the greatest theoretical sense to view the RTE as being one of the determinants of research self-efficacy and attitudes toward research (rather than vice versa)" (Gelso et al., 2013, p. 318). Later the theory would be revised again to include 10 characteristics, including students being taught in the later part of their process how research can be done in practice settings (Gelso et al., 2013).

In attempting to relay the importance of scientifically minded practitioners, studies assert (Bieschke, 2006) that neophyte researchers should recognize the value of research processes and research's contribution to professional practice even if they may not professionally engage in them after graduation. In the interest of theoretical strength and focus, the use of social cognitive theory's factors in relation to a research training environment is highlighted. This conceptual article reviewed literature that points to the directly proven and disputed outcomes of research training environment, research productivity, and research self-efficacy. However, the one consistently reported outcome was the relationship between research training environments and

research self-efficacy, as well as between research self-efficacy and research productivity. While Bieschke covers substantial literature in the area of beginners in academic research and their abilities, the literature does not apply the research training environment theory with HBCU students. Instead of applying the theory to an interdisciplinary student base with emphasis on a specialized institution, the research is proven to apply the theory to a specialized discipline (counseling) with no regard to cultural differentiation. The article does provide an explicit definitions, particularly for the concept of research productivity which is defined as "published or in press manuscripts, book chapters, scholarly presentations at professional conferences, dissertation progress, and current research involvement" (Bieschke, 2006, p. 85). Additional research (Mallinckrodt & Gelso, 2002) strengthens the notion of a strong relationship between research training environment and research productivity. The purpose of their research, however, focused also on personality types of researchers. Interpersonal factors and instructional factors both have a positive impact on research productivity.

Kahn and Schlosser (2010) further strengthened the abundant literature that supports the correlation between positive reports of research training environments and students' research interest. However, the findings indicated that there was no difference between the research self-efficacy of students reporting positive RTEs and students reporting negative RTEs (Kahn & Schlosser, 2010). The researchers in this admit to limits surrounding the lack of student-centered analysis that takes personal factors into consideration. The study, however, does provide thorough assessment (Creswell, 2012) from multiple points of view, including program assessment and faculty reports on RTE.

It is of note that the student-centered evaluation of RTE tended to heavily imply that interpersonal factors were more meaningful in RTEs than instructional factors (Shivy,

Worthington Jr, Wallis, & Hogan, 2003). The successfully use of mixed methods (Creswell, 2012) was used in hopes to influence other doctoral programs to systematically evaluate the perceptions of their RTEs.

Kahn and Miller (2000) shortened the RTE-R and conducted three studies to ensure its validity in efficiently representing the original intent of the RTE scale. Ultimately, the RTE-R-S maintained the overall integrity of the RTE-R. The short form of the RTE is best utilized if researchers are interested in total scores and not the scores of each subscale. The shrinking of the scale reaffirmed the relationship between research training environments and research self-efficacy among counseling doctoral students. Of note is that the three studies had participant population of 80 (with 2 African Americans) to 270 participants (20 African Americans). The third study showed that 6 out of the 155 participants were African American (Kahn & Miller, 2000). Additional variations to RTE scales include the specification of internships RTEs (Phillips et al., 2004). Interning in the HBCU setting as a university practitioner or in fulfillment of HBCU graduation requirements can further satisfy the overarching definition of research mentoring. Considering the mission and the high concentration of Blacks at HBCUs, it makes sense to conduct studies at such institutions with RTE as the framework.

Reviewing existing literature on RTE (Gelso et al., 2013) shows an existing need for more student-centered research that elaborates on factors autonomous to the student mentee and how those factors potentially impact her/his perceptions of research training. This dissertation aims to begin to expand on this literature by applying an additional lens to a specific demographic to further globalize RTE theory as framework for mentoring and predicate for research activities.

Reviewing the Characteristics of RTE

The nature of RTE theory implies that faculty members, departments, or entire institutions perform in ways that aids or restricts the research attitudes and behaviors of their doctoral student populations. This population is viewed as novice researchers that benefit from guidance and mentorship from expert researchers in their institution. Interpersonal (four characteristics) and instructional factors (six characteristics) shape the theory.

Faculty serving as role models. Mentors who develop personal relationships with mentees have an impact on the mentee's perceptions and behaviors towards research. When these mentors exhibit positive research behaviors and reactions to research, they positively affect their mentees perception of research. Faculty who complain about research or speak of the execution of research as something that is difficult and time consuming actually assist in nurturing research anxiety in their mentees. Sharing both positive and negative research experiences with students is an effective way to model appropriate research behavior (Gelso et al., 2013).

Reinforcing research activity. In order to create a positive research training environment, mentor faculty members who positively reinforce student research behaviors both formally and informally are likely to encourage positive reactions to conducting research for their mentees. Furthermore, this reinforcement reduces student anxiety concerning research. Providing funds and resources that allow students to expand their opportunities for conference attendance and dissertation completions is part of the reinforcement of scientific research activities. Furthermore, public recognition of the research achievement of students is an additional collaborator of this characteristic of RTE theory (Gelso et al., 2013).

Low-risk opportunities for research. Early in students' matriculation, RTE theory suggests they become involved in research deemed minimally threatening. To reduce what is considered minimally threatening or low-risk, students should be involved in research that conforms to their level of research comprehension. Including research seminars and involving student in research teams assists in positive development of research training. Low-risk opportunities assist in reducing the anxiety that students may develop. The reduction of anxiety has a positive effect on their feelings and behaviors about research (Gelso et al., 2013).

Emphasis on the social aspects of research. Despite the discipline, RTE theory recognizes research can be a social experience. Though many aspects of research obviously rely on self-direction and self-leadership, students who are on research teams or who collaborate with their advisor are more likely to develop a d maintain interest in research. Collaboration with colleagues on teams and mentor-mentee collaborations are listed as the "primary vehicles through which the social-interpersonal aspect of the research endeavor may be realized" (Gelso et al., 2013, p. 142).

Teaching that all research is flawed. When novice researchers are taught that all research potentially has flaws, they are then more inclined to seek out methodology for their research that produces the least amount of flaws. The explanation for the characteristic of this theory implies that students will develop a systematic approach to research if they are taught and reminded that all research is flawed in some way (Gelso et al., 2013).

Instructing students on a variety of approaches to research. Teaching only one method of research hinders the long-term development of new student researchers. Students may develop research interests that require a variety of methods. Although they may become an expert in one approach to research as a result of being taught that one approach, they increase the

likelihood of productivity and interest in research if they are exposed to various approaches. The assortment of approaches to research increases the opportunity for students to find a type of methodology that fits their interests and temperament, increasing their comfort level with research and assisting in strengthening their confidence and comfort level. This contributes to their self-efficacy and productivity in research (Gelso et al., 2013).

Encouraging student to look inward for research ideas. Although initial studies testing the characteristic of RTE theory suggested that students immediately seek research that interests them in their doctoral program (Gelso, 1996), further review suggests that student be encouraged to look inward for research ideas when they are more prepared and comfortable with research processes. This characteristic of the theory suggests that they doctoral students be involved in research groups during the earlier stages of matriculation, and graduate to developing their own research ideas later on in their academic journey. Looking inward for research ideas at the appropriate time is positively associated with doctoral students' favorable feelings towards research (Gelso et al., 2013).

Stressing the relationship between research and industry. Doctoral students may have a proclivity to focus on their matriculation in terms of providing them with skills that aid in their professional practice after graduation. RTE theory recognizes that research depends on practice. If practice were to rely solely on research then theory could potentially be applied to practice situations without taking full account of the individual situation. This means practitioners could misapply research to practice. RTE theory recommends that doctoral students be reminded that practice and research are closely related and that research helps to inform their industry. Research is vital to sound practice (Gelso et al., 2013) as well as the

responsibility of adding to the body of knowledge in doctoral students' respective fields of study (Mallinckrodt & Gelso, 2002).

Teaching research and statistical design. The testing of RTE has tested and retested this construct of the theory over its 15-year history. There have been revisions to how this characteristic fits into research training. The theory attempted to avoid student becoming statisticians. But understanding statistical design is apparently important to the development of research students. In addition to statistics, such knowledge will allow novice researchers to understand which methods are most applicable to their research interests (Gelso et al., 2013).

Instructing on research execution in practice settings. Towards the end of one's matriculation, the theory recommends that students engage in the practice of interning in order to experience the application of their skills to an industry. While building confidence the student can become a valuable commodity to an agency by bringing their newfound skills and apply their abilities in a practice setting. This also is thought to lay groundwork for building productivity in doctoral students (Gelso et al., 2013).

Conclusion to theoretical summary. RTE theory has been well test over the past 15 years. The characteristics of the theory suggest that faculty mentors utilize their expertise and their resources to ensure that doctoral students gain necessary instruction. These relationships are meant to help develop the students so that they can effectively matriculate through their programs of study and become more expert researchers in an effective manner.

Faculty-Student Mentoring

Other studies do point towards mastery experiences as primary implicates in research behaviors and activities (Baltes et al., 2010; Deemer E.D, Martens, Haase, & Jome, 2009). However, the nature of RTEs suggests that instruction and modeling are the primary actions to

be taken. As a result, mentoring relationships would be established between neophyte researchers (doctoral students) and expert researchers (faculty) in the university setting. Because faculty have roles varying from instructor to supervisor to advisor (Lechuga, 2011), and faculty-student mentoring can be defined as the activities aimed at professional and personal development of a student, the term "mentoring" is used in this study to satisfy any relational experience that provides modeling and/or teaching. When HBCU students were questioned concerning preparation for graduate school several themes emerged that align with the overall purpose of mentoring, including interpersonal connections, mastery experiences in the field of study, and access to information (Davis et al., 2010). Jowett and Stead (1994) took a closer look at mentoring in higher education. The authors believe that collecting the experiences of mentoring in higher education would help to discover important emerging themes that could help pinpoint effectiveness in mentoring. Mentoring was defined with the sole purpose of advancing the knowledge of the novice by the relationship had with faculty experts. By reporting the mentoring execution of 5 different departments at Leeds Metropolitan University, the authors found varied strategies in informal and formal strategies. Some departments had formal processes while others had supervisors check in on organized group meetings and reported that mentoring occurred then. Researchers did find that intensity of mentoring did vary in departments depending on a student's credit hour standing (Jowett & Stead, 1994). Ultimately, the findings point the researchers to declare a lack of theoretical definition when it comes to mentoring, despite the purpose of the article. Furthermore, an article supports the methodology of this research by acknowledging the lack of quantitative opportunity without a strong conceptual approach for mentoring between faculty and students in higher education.

Quantitative reports have been conducted on the subject of mentoring. Strayhorn and Terrell (2007) conducted a study that examined the relationship between Black students' participation in a mentoring program in college and satisfaction with college. Mentoring was defined as a relationship that matches academic experts with academic novices. Reciprocity was included in the definition of mentoring. Mentors are thought to benefit not only from the emotional satisfaction gained from helping students, but from the experience of revisiting the beginning of an academic journey by associating with students (Strayhorn & Terrell, 2007). This gives experts an opportunity to reevaluate and gain new insight on personal academic mantras. Students do benefit from modeling and being socialized appropriately to their respective academic environment through their mentor. The results of the study showed a strong relationship between research-based formal mentoring experiences among students and their satisfaction with college. Researchers then call for additional research on the topic including the specific ordeal of mentoring Black students through independent research projects such as thesis and dissertations.

Lev et al. (2010) discusses the educational issue of mentoring and research attitudes among students. The authors are in agreement at the literature failing to show a definitive theory on the role and depth of impact that mentors have in the mentoring relationship. The work has provided evidence that the issue is important in reference to several points. The Clinical Research Appraisal Inventory measurement tool measured research self-efficacy specifically but again, there was not validated construct to measure mentoring. According to Creswell (2012), administering instruments to ensure that data collection is free of bias is a qualification for a qualitative study. Ultimately 21 mentor/mentee dyads were surveyed and analyzed for the study.

The findings show that there is a substantial difference in the perception of mentee's self-report of research abilities (M = 6.8) and a mentor's perception of that same student's abilities (M = 8.4). The researchers use conceptual and empirical information to point out that the misalignment between self-efficacy appraisals can affect mentoring experiences and produce educational and profession dysfunction. If misalignments cause these types of troubles, it is important that the experience with mentoring and self-efficacy be examined more fully from a student perspective.

The researchers do state the purpose of the study as a comparison of student perceptions of confidence in abilities in clinical research versus faculty mentors' perceptions of the students' ability to perform clinical research. The findings did show that mentors rated mentees is having higher self-efficacy than mentees rated themselves, indicating the varying perception of student progression among mentors and mentees (Lev et al., 2010).

Sprague, Daw, and Roberts (2001) qualitatively measured the influence of mentor relationships on ethical research beliefs. In a survey and questionnaire given to graduate students and faculty at a research university, students listed mentor's influence almost last in determining beliefs. While this may aid an argument that graduate researchers are self-leadership and beliefs are shaped prior to mentor relationship development, the study merely tackles the beliefs of the students and faculty and not the practices. Cognition does guide behavior, however, the study does confirm that there is a measurable relationship between faculty mentors and student researchers (Sprague, Daw, & Roberts, 2001).

The measurability of mentorship's impact on higher education is further highlighted in other empirical studies (Wang et al., 2009). The investment that is required of mentors is often to the detriment to the mentee. Depending on the relationship, mentoring will affect the "pay-it-

forward" desire in the mentee to continue the tradition of mentoring once s/he is in a position to do so. The mentoring dyads that were surveyed for the purpose of Wang et al.'s article were research trainers and their trainers in a corporate setting. The formal mentoring program, although in a corporate and not academic setting in the article, gives insight in recent practices in mentoring and the culture creation that occurs as a result of these experiences. In relationship to this research, showing the relationship and attachment style between mentor and mentee is important in establishing the fact that the relationship is deep and lasting. Knowing the depths of the effect of mentorship brings its evaluation in research self-efficacy to the forefront.

These dimension change and provide a different perspective on self-efficacy once research deals with mentoring and race/nationality (Ortiz-Walters & Gilson, 2005). While formal mentoring prescribed by an organization may report positive results in corporate environments, academic mentoring occurs with some differentiating elements. Ortiz-Walters and Gilson define mentors as protégés as opposed to trainees, signifying a more personal and in some instances more informal relationship between expert faculty and novice student. The hypotheses of the study suggest that mentee's report greater trust of her/his mentor when they share cultural similarities. Factors in the many hypotheses in this complex issue included interpersonal trust and comfort and satisfaction in the mentoring relationship between mentees. Results conclude that students in general seem more culturally comfortable with mentors of similar races as themselves, however it is of less importance to white students than students of African, Native, and Latino heritage. There is an apparent cultural need that academic mentees could require from their mentors. Universities with specialized missions to educate students of color could directly feed these needs. Therefore, cultural components of mentoring are

important and experiences of students who are at these specialized institutions deserve further exploration.

Most research on mentorship either deals with either perspectives (the mentor and the mentees) or exclusively attempts to measure the experiences of one position individually. Although the research does provide viable perspectives, there is little research that deals with them in reference to research and self-efficacy. More recent research search report on both sides of the mentoring dyad and point directly to its relationship to maintaining a desired culture (Eby et al., 2010). Mentoring experiences can give insight to future behavior of institutional members. As the findings of the study suggests, poor experiences with a mentor or a mentee make a longer impression than a good experience, leadership in the university may benefit from better understanding the mentoring process. Insight into the experiences, can grant leaders with resources the opportunity to take necessary measures to influence the mentoring and, subsequently, the research culture in the university.

Fisher, Fried, Goodman, and Germano (2009) reported positive results between mentoring ethical research practices and ethical behavior. Finding further suggested a correlation between mentoring appropriate research behaviors and research productivity (Fisher, Fried, Goodman, & Germano, 2009). The use of advisor-advisee didactic measures further point to the prevalence of discovering mentor's impact on the research behaviors of mentees (Schlosser & Gelso, 2001).

Overall, the importance of mentoring on research development between students and faculty is undeniable. According to Lechuga (2011), "Scholars have demonstrated that one of the most important factors that graduate students use to ascertain the quality of their educational experience is their relationship with faculty" (Lechuga, 2011). This influence has an impact on

research culture and productivity. Since mentoring is professionally and personally beneficial to all parties involved in a mentoring relationship it is methodologically fitting that research focuses on the expectations of the mentor from the mentee and vice-versa. Discussion reemphasized that faculty reported an increase in their own research by becoming a mentor to a student. Findings in Lechuga's work further demonstrated that mentors did not force students to participate in scholarly productivity, but emphasized that there is an obligation to contribute to their field of study. This research maintains a strong intent to highlight how these relationship are perceived to impact a student's ability to conduct research, keeping in mind that the research itself has a noticeable effect on the university as a whole (Rogers, 2012). Kahn (2001) states, "If educators are to work toward the goal of increasing the scholarly activity of their students, there is a need to understand factors that influence student involvement in scholarly activities" (p. 334). In Kahn's study however, mentoring is parallel to RTE and not a subset of RTE in the context of scholarly productivity. The findings indicated that mentoring was not a decisive factor in student reported scholarly involvement. The researcher does suggest that those results could be attributed to overlying models leading to scholarly productivity, since the theoretical model used had multiple aspects (Kahn, 2001).

Hollingsworth and Fassinger (2002) measured mentoring and its relationship to research self-efficacy, feelings about research, and productivity. Findings suggest that mentoring experience can help to predict the research behavior of novice researchers (Hollingsworth & Fassinger, 2002). With a need to continuously develop research environments in HBCUs, a collection of experiences form students in that specialized environment can become a specialized predictor to further the discourse on contributions by advanced degree HBCU recipients.

CHAPTER 3

Methodology

While quantitative data exist that measure students' research attitudes and behaviors, the literature fails to show qualitative insight to students' perceptions of mentoring as an effector of their research training. Though HBCUs produce a high percentage of Black PhDs, there is still a disparity of minorities in tenured faculty positions (Turner, Myers, & Creswell, 1999). Furthermore, there is an inconsistent disparity in researching funding awarded to minority serving institutions (Stuart, 2012). HBCUs, however, are commonly lauded for achievements in faculty-student relationships. The gap in literature exists in the lack of it that focuses on the classification of the student (undergraduate, masters, doctoral students) and whether the faculty-student mentoring relationship had an effect on doctoral students' interest, pursuits, and self-efficacy in research. Studies have suggested that academic programs should use research in order to "assess student perceptions of their research training" (Shivy et al., 2003). The purpose of this research is to capture HBCU doctoral students' experiences with their faculty mentors and analyze the research by conducting a qualitative one-on-one interviews and a focus group with a social constructivist worldview.

In an attempt to gather the experiences of these students, a constructivist worldview allows for an interpretation of meaning based on participants' ideas and expressions (Creswell, 2007). In addition to social construction, this study also considers a social justice worldview. Social just worldviews consider that justice is a societal value. Individuals are not only called to be just, but systems and organizations are implored to promote balance and equality (Barry, 2005; Miller, 1999). Considering the lack of research on HBCU doctoral mentoring and HBCU research environments, the constructivist worldview serves to analyze the results in a way that

examines students' reality in response encounters with their faculty members. Other important factors in social constructivism are the comprehension of participants' "historical and cultural settings" (Creswell, 2007, p. 20). The aim of this study was to identify the cases of shared experiences of participants and analyze emerging themes and differences that occurred, all while keeping in mind the theoretical tenets of RTE theory. Social constructivist's worldview does require that the participants' responses be strongly related to the theoretical orientation of the research (Creswell, 2007). Therefore the research questions and interview questions were constructed with the theory in mind.

Research Sites

While there are over 100 universities in the United States (and U.S. territories) with the specialized mission of educating all people, especially Black Americans, this research focused on the colleges in the state of North Carolina. North Carolina colleges and universities are accredited by the Southern Association of Colleges and Schools (SACS) Commission on Colleges. While many universities may offer different types of advanced degrees the National Center for Education Statistics differentiates between doctorates, doctorates for professional application, and doctorates for research and scholarship. According to the National Center for Education Statistics (NCES) database, North Carolina has nine HBCUs. Under SACS, only Georgia and Alabama have as many. All three states have three HBCUs that award doctoral degrees, making North Carolina the state among SACS that houses that many HBCUs. North Carolina also has more public HBCUs (5) than any other state under the accrediting body. For these reasons, two HBCUs in North Carolina are the research sites for this study.

The mission of each of the universities addresses research, scholarship and globalization.

1. North Carolina Agricultural and Technical State University mission statement:

   North Carolina Agricultural and Technical State University is a public, high research activity, 1890 land-grant university committed to exemplary teaching and learning, scholarly and creative research, and effective engagement and public service. The University offers degrees at the baccalaureate, master's and doctoral levels and has a commitment to excellence in a comprehensive range of academic disciplines. Our unique legacy and educational philosophy provide students with a broad range of experiences that foster transformation and leadership for a dynamic and global society. (retrieved from http://www.ncat.edu/divisions/academic-affairs/bulletin/2012-2014/gen-info/vision-mission.html)

2. Fayetteville State University mission statement:

   Fayetteville State University (FSU) is a public comprehensive regional university that promotes the educational, social, cultural, and economic transformation of southeastern North Carolina and beyond. The primary mission of FSU is to provide students with the highest quality learning experiences that will produce global citizens and leaders as change agents for shaping the future of the State. Awarding degrees at the baccalaureate and master's levels, and the doctorate in educational leadership, FSU offers programs in teacher education, the arts and sciences, health professions, business and economics, and unique and emerging fields. FSU is an institution of opportunity and diversity. Committed to excellence in teaching, research, scholarship, and service, the university extends its services and programs to the community, including the military, and other

educational institutions throughout North Carolina, the nation, and the world. (retrieved from http://www.uncfsu.edu/mission)

Participants and Selection

This research examines the research experience of doctoral students at HBCUs to ensure that informants are required to carry out original research and develop research-inspired relationships with faculty members in their departments through dissertation processes. The participants were chosen from the HBCUs in the state's university system.

The researcher solicited the participation from doctoral students in programs with required dissertations to ensure that the informants are individuals who must demonstrate a value of research and have relationships with faculty advisors as well as research committees.

The researcher contacted the graduate departments of each university for access to potential student participants. Potential participants received an electronic message detailing the purpose of the study with a request for their participation in the focus group. Participants will initially learn of the study via email.

Before solicitation, permission was requested by contacting the department and designated liaisons to doctoral student or personal recommendations were given to the researcher. In the event that participants were suggested to the researcher, the participant received the researcher's contact information and followed up on the request to be an informant. Participants were also recommended and selected. In this case, informants were given the researcher's telephone number and email, and instructed to contact her to a willingness to participate. Compliance offices at all universities were contacted and approval was obtained before contacting students. One-on-one interviews were conducted with at least two participants from each research site. The research sites are North Carolina Agricultural and Technical State

University and Fayetteville State University. Interviews were conducted face-to-face, by telephone, or by videoconference.

Interviews were between 60 and 90 minutes in length and the audio was recorded for transcription. All participants consented to the interview and chose or were given a pseudonym to protect their privacy. After transcription and analysis, the respondents were asked to confirm the transcripts of the principle investigator through a member checking process. The respondents have been given access in order to provide clarification of the quote. The collected data was analyzed by establishing categories based on the responses, chunking similar responses together, and developing a code for the similarities and analyzing for emerging themes. Emerging themes have compared to the research questions and theoretical frameworks of research training environment. The principle investigator utilized ATLAS.ti computer software to assist in the analysis of data. With the extensive use of digital audio recordings, as well as transcribed files, ATLAS.ti software allowed the principle investigator to upload, organize, and analyze the data more efficiently.

Research Design

The researcher used maximum variation sampling for the focus groups and opportunistic sampling to obtain the one-on-one interview participants for this instrumental/collective case study (Creswell, 2007). Researchers commonly use collective case study methods when working with multiple research sites that are all addressing one issue. This way, the research is able to show a variety of perspectives on the issues (Creswell, 2007). In both protocols for a focus groups as well as one-on-one interviews, data collection was confidential. According to Creswell (2007) individual interviews are used to collect a rich experience from the participant, particularly when the researcher is not able to observe the informant in her or his daily setting.

Because the history and progression of the mentoring experiences collected were not able to be observed first hand by the researcher, individual interviews were used.

This research used an interview protocol sheet that collected information detailing participants' background information (years in the program, race, and gender), as well as correspondence, audio recordings, and notes from focus group interaction and one-on-one interviewing in order to ensure thoroughness of data collections (Yin, 2003). A focus group approach is a strategy of inquiry in this study for many reasons. Research surrounding research training environments and research attitudes and behaviors (self-efficacy) has relied heavily on quantitative approaches with statistical data determining participant's feelings toward the topics. However, some of researchers using quantitative measures do call for qualitative approaches to expand on the thoughts, feelings, and understanding of the informants. Furthermore, a focus group study allows participants to express experiences, explore similarities in experiences with other informants (Krueger & Casey, 2009), and expand on their desires and feelings about their research training experiences as well as perceptions of their research mentors positive and negative influences on ability.

Data collection. The focus group interviews were face-to-face. Most of the one-one-one interviews were via telephone and Skype was utilized to capture one interview at North Carolina Agricultural and Technical State University. There was one focus group and five individual interviews. At least two participants represented each participating university. The researcher implemented interview protocol by asking neutral and open-ended questions to the group (Litosseliti, 2003). Audio and visual recordings were utilized during the interviews and the conversations were transcribed within one week of data collection. Participants were asked to sign consent forms and protocol sheets upon arrival. Informants who participated via video

conferencing or telephone conversations were mailed consent forms with self-addressed stamped envelopes used for them to return the paperwork to the researcher. The registration that they completed gathers information on their status as a student and other demographical information. They also had an opportunity to read and re-read the protocol, risks, definitions and confidentiality information. The researcher announced the purpose of the study before the discussion began. A few of the interview questions were as follows:

1. Please explain your experiences with research mentoring at this university.
2. Please discuss your confidence level in your ability to complete your required research and research in your post-doctoral development.
3. Do you believe mentoring experiences has contributed to your ability to conduct research?
4. How do you feel you have been provided opportunities to build your research ability based on your perception of your university's/department's research climate?
5. Has your relationship with faculty members increased your abilities and desires to do research?
6. Have you been encouraged by faculty mentors to pursue your own research interests?
7. Describe your personal research efforts. How has your mentor or department supported your efforts?
8. Please describe any faculty member that you would consider an academic or research role model.

Interview questions were semi-structured based on the climate and the responses of the participants. Using Krueger's paradigm for interview questions, the focus group discussion began with opening questions that allowed participants to talk about themselves and become

comfortable before the discussion moved into introductory questions. These questions discussed the overall topic using key terminology. Next, transitional questions were asked in response to the body language, agreements, and disagreements among participants. In the event of repetition or similarities in responses, key questions were developed to clarify the apparent emphasis on a topic or response. Finally, ending questions were used to ensure clarity and allow participants to confirm the moderator's understanding of the conversation (Morgan, Krueger R.A., & King, 1998). Group interview results were also transcribed. The researcher read and re read the transcripts to identify emerging themes. Then, ATLAS.ti software was used to code the themes that the researcher identified by her analysis (Morgan, 1993). After analysis, the researcher utilized member checking and peer debriefing in order to ensure that the analysis was accurate and properly represented the sentiments or the participants. All participants responded to the member checking and the peer debriefing.

A concern in the use of focus groups is appropriate saturation. Saturation ensures that a viable amount of groups and their characteristics completely cover the purpose of the research (Krueger & Casey, 2009). The group interview was conducted at North Carolina Agricultural and Technical State University to ensure that doctoral students from different departments were could compare, confirm, or find contrasting discussions in their research mentoring experiences. The researcher set up interviews with two HBCUs: one school with seven research-based doctoral programs (the first doctoral program being accredited three decades ago) and one school with one research-based doctoral program.

Data analysis. Qualitative computer software was used to analyze the transcribed data. Analytic frameworks by Krueger and Casey (2009) were considered when processing data. Constant comparative framework was also used to find comparisons between two coded pieces

of data in order to compare and contrast the two. Coding and categorizing data is necessary in order to process this kind of information and identify the relationships, patterns, and differences. Critical incident was another framework that was considered in this study. Because the data collection is focused in part on experiences that impacted participants' beliefs, chapter four of this study attempts to identify events that may be specific to a small number of participants but are still critical to their experiences, behaviors of beliefs. Finally, key concepts analysis involved the participants and confirms themes that provide additional support for significant themes in the discussion (Krueger & Casey, 2009). Participants assisted in analysis through peer debriefing which granted them access to the transcripts, and member checking which asked them to confirm or clarify the analysis that was provided by the researcher.

Confidentiality. A breach of confidentiality was minimal but the possibility during transcription could have occurred. To prevent this, the researcher asked participants to keep discussions confidential and not share anything with others outside of the group. The researcher used discretion in collecting and storing results and utilized password protection on audio files, notes, and transcribed documents and kept consent forms and demographic information collected from the consent forms stored in a lock box.

There was a need to code participants' data and link it to their emails because of the member checking process that occurred after analysis. In the pursuit of reliability for this research, via email, the researcher sent analyzed quotes to the respective informants and allowed them to confirm or modify their interview statements. In order to send the quotes to the correct informants and to protect the informants, the researcher needed to code participants' data and link it to their email addresses.

It was important that the collections of incidents acquired be examined for issues and relevance. One-on-one interviews were analyzed using categorical aggregation as well as naturalistic generalization (Creswell, 2007) which allowed analysis to infer application of findings to the exact case or cases.

Justification of Approach

The justification for qualitative approach is that the researcher is the key instrument of data collection. The researcher understood and interpreted the participants' meanings, keeping in mind that the experiences shared by participants were created through cultural and social interactions (Creswell, 2007). While reflecting on her role, the researcher maintained an expectation of emergent data, themes, and responses. Using this approach allowed the researcher to frame human behavior in a specific context (Creswell, 2012).

The worldview of social constructivism is appropriate to this study for many reasons. In a general sense, this research will further help to understand the world in which we live. Such a worldview also recommends that the research goals rely on participants' perceptions of the topic. Opinions are formed through social interactions as required by social constructivism. The worldview of social constructivism is appropriate with the purpose to gather and interpret shared experiences. The researcher can recognize personal background of self and position or adjust these biases accordingly. Ultimately social constructivism allowed the researcher to put the theoretical orientations in participants' perspective lens.

According to Morgan (1993), there are specific instances in which focus groups should be considered in academic research. Though research mentoring in the university may occur through formal and non-formal relationships, the study is relevant for institutions that utilize formal methods that pair experts with novices. When there are perceived power distances

between the participants of the focus group and decision makers, then focus groups are considered appropriate for the research. Furthermore, experiences differ; using a focus group can determine to what degree a group of participants agree on a topic (Morgan et al., 1998).

Because RTE theory implores the efforts of the faculty and their influence with the student body, program development occurs. Focus groups are commonly used to guide program development. Initially focus groups are used to understand the consensus of stakeholders in the program. Once a system is put in place based on the results, another focus group can be assembled in order to test and suggest revisions to a program. Once those revisions are made, a final focus group can be conducted to evaluate the implementation of the program. In the interest of this research, the focus groups were used in the manner of the first phase of program development: the participants were utilized to understand the existing system based on RTE theory (Krueger & Casey, 2009). Focus groups are considered for academic research in order to understand organizational needs and concerns.

Justification for the focus group method of inquiry includes the perceived relationship between the goals of social constructivist qualitative case studies and the characteristics of the focus group as out lined by Krueger and Casey (2009). Because this dissertation includes advanced degrees students at universities with specialized missions, a focus groups method ensured that there is a focused discussion, making qualitative data that helps better understand the topic of interest (Krueger & Casey, 2009). The issues are bounded by the experiences or cases of the participants. With RTE theory as a theoretical lens, the use of interviews plus focus groups ensured the research was specifically focused on participants' mentoring interactions.

CHAPTER 4

Results

In this chapter the results of the study are reported. The data collected included five interviews and one group discussion focused on the mentoring experiences of HBCU doctoral students in the state of North Carolina. Between group interviews and one-on-one interviews, this study received data from nine participants. The participants represented four academic departments across two universities.

Introduction

Data analysis included searching for emerging themes based on the transcripts of participants' responses. Themes were coded and participants confirmed or clarified the analysis (member checking) through peer debriefing (access to transcripts). The questions used Gelso's (1996) theory or research training for doctoral students. Questions were created with the ten themes in the theory in mind. The theory states that there are steps that faculty can take to ensure that the culture of research is established in doctoral students.

Table 1

General Demographical Make-up of Participants (N = 9)

Characteristic	*n* (%)
Gender	
Female	7 (77.8)
Male	2 (22.2)
Race	
Black	7 (77.8)
White	2 (22.2)

According to the analysis of the demographics, respondents were mostly African American women.

Table 2

Respondent Identification and Years in the Program

Respondent's Name	Number of Years in their Doctoral Program
Alfred	2
Miranda	3
Beulah	3
Emily	4
Michael	4
Maggie	3
Betsy	5
Stephanie	5
Lisa	5

This study examined three research questions. The primary question sought to collect the faculty-student mentoring experiences of doctoral students at a Historically Black College or University. The next research question related to how or if these experiences shaped students feel about their ability to do research. The last research question sought to find a relationship between these experiences and RTE theory, which is comprised of interpersonal and instructional tenets.

Other themes emerged concerning participants' feelings about the quality of mentoring, faculty-student interaction, and research climate in their respective departments. In order to achieve this research goal, one focus group and four individual interviews of doctoral students were conducted. The respondents in these interviews used the terms "faculty," "mentor," "major professor," "dissertation chair," and "advisor" interchangeably. Likewise, the terms "research," "publication," and "dissertation" were used interchangeably.

Table 3

Research Training Environment Theory (Gelso et al., 2013)

Interpersonal	Instructional
Training research through low-risk opportunities	Encouraging students to generate their own research ideas
Supporting students' research efforts	Teaching a variety of approaches to research
Emphasizing the social elements of conducting research	Emphasizing the relationship between science and practice
Having faculty serve as role models of positive research behaviors	Teaching research and statistical design
	Teaching that all research is flawed
	Instructing student on research execution at the end of their program

Qualitative analysis of that data included transcription followed by repeated reviews of the transcripts for emerging themes. Though the participants came from different schools and various academic fields of study, commonalities began to emerge. Transcripts were uploaded into ATLAS.ti analysis software. The researcher took notes on her initial reads of the transcripts and began creating notes to develop codes for emerging themes. Using the coding function on ATLAS.ti, 25 codes were initially developed. Several of the codes were merged together due to their similarities. Other codes were grouped into a super family do to their relationship to one another. The ten characteristics of RTE theory were grouped into a super family to properly identify them separately from other emerged themes.

Once the codes were grouped, they were then electronically tagged to specific quotations in the transcripts. The list of the codes with the respectively tagged quotations from all transcripts was exported to a singular third party word processing program. The file created from this export was referenced for analysis.

Research Process Challenges

Students did report a level of concern and emotions about research processes experiences. Many students stated that they saw other classmates engage in research opportunities that they also desired to engage in but did not have access. Other students stated that they had various levels of anxiety about their research processes. While many students in the group discussion expressed an interest in research, they also had various levels of anxiety concerning their research processes including their dissertation.

Research anxiety and frustration. During an individual interview, Michael expressed frustration with research mentoring. He desired a more constructive approach. In discussing some of the advising experiences he had, Michael stated that his advisor

> [knows] some of my deficiencies. If I come to you [the advisor], just don't tell me "okay, well, figure it out on your own." Just help me. Show me what I can improve on and I can do the rest.

He continued to discuss his emotions about research preparation for himself and other classmates in his department. He stated that he and his colleagues in some instances seemed underprepared for writing and research at the doctoral level. Reaffirming the necessity of research in his field of study, Michael acknowledged that the ability to prepare technical documents was important. He stated,

> [Student researchers] are going to have to write documents – technical documents. If you can't do that you're out. So we have a serious problem in our department. I've seen it not just in my department. I've seen it at [other schools]. The problem we have is we don't know how to write . . . we can't write . . . We need more writing classes and more research type based classes because honestly students don't know what to do. They think

> literature is useless, just copy the paper. That's not what it is. No, you read, get ideas, kind of put your own thoughts on what this person is working on. So, yeah. I just think writing is a problem. We can't write.

During a follow-up discussion, Michael stated there is little support when it comes to learning research. He stated that he has learned to read about research independently.

> You have to. That's the only way; because honestly they are not going to teach you how to do research. The professors feel like okay "well, you are a PhD student. You should have picked that up along the way." But honestly, for me, no—I don't know how to do research.

Over the course of the discussion Michael became more optimistic about his abilities when discussing the progression of his relationship with his research faculty mentor. Michael discusses research ideas with his mentor, though he believes that his mentor does dominate Michael's research opportunities. Michael has experienced low-risk opportunities to do research in relation to RTE theory. He stated that as his relationship with his dissertation chair improved, his anxiety about his ability to conduct research lessened, stating,

> I struggle with research. But I'm better now. I know how to think and about what I'm doing and I guess going through a process to achieve my goals. Before I had no clues. It was very difficult for me.

In addition to feelings about their research ability, participants also expressed concern that the anxiety they felt about their research abilities caused them to miss opportunity to engage in research. Alfred shared one specific experience:

> In our very first class, my first class that I took in this program, one of my papers that I wrote, the professor was impressed enough with it that he said he wanted me to turn it

> into a formal book review and have that published. But that never did quite pan out. And I was more of the holdup than anyone because I didn't know where to begin. I kind of freaked out.

Miranda shared a similar experience in the group discussion. When her professor approached her about transforming her course work into a research publication, Miranda stated that she was not able to move forward because she was unaware of what steps she should take to engage in research. She stated, "that was the hardest thing: is this professor saying 'you really have to turn this into something great.' This was my first semester. I didn't know what to do. I couldn't." When prompted to provide additional details of how interaction with her professor influenced her progress Miranda said:

> It was never brought up again or I was never asked about it. If somebody had said, "hey for your writing next week, write up an abstract." If I had been pushed to or had been told, "take his concept and write an abstract. Here's a conference or here's a journal. Or here is something maybe you could turn that into [something]" then, yes. Then I might have been more inclined if I was told there's a place to submit it. If I was actually given the assignment of writing an abstract. But the truth was I didn't know what to do with it, so I did nothing.

Miranda furthermore shared her emotions about her dissertation. She stated, "I'm struggling and I am really a little panicky about this whole process. So I feel like that's been a big hole, at least for me, and I think maybe I am not so alone in that."

Maggie's individual interview also expressed a slow progression into research mentoring. In her early experiences in her program she stated:

> Before I got to the research course, I had not received any formal research mentoring at the university. But now, I have a mentor who is also my chair and even before she was my chair, she served as a mentor and gave me information that I needed about research.

Although these experiences demonstrate that respondents were encouraged to pursue their own research interests (according to Gelso's RTE theory), some respondents did not feel that their mentor had properly guided them through the process.

Of note is an outlier that did exist in this study. Stephanie only had positive experiences to recall when prompted to discuss her research experiences. She purported:

> It is a rigorous program, but to me the organized steps that they have taken into practice for us obtaining this degree, has truly made sense to me. It's organized, it's in a sequential order, and therefore when I repeat this process and I am going through any type of research initiative or planning for a conference, I think that I have a strong foundation in order to execute that out.

Informants discussed anxiety about research in terms of lacking guidance and examples that helped them to clarity whether or not they were executing research properly. Lack of information concerning the next step in a research process after a draft or potential document was created was the primary response to the emerging trend of research execution anxiety among participants. Informants desired more step-by-step instruction in terms of dissertation research, and further desired confirmation that completed research steps were confirmed by a faculty advisor.

Faculty shifts in position and turnover. During an individual interview a participant (Stephanie) confirmed that she also had a research opportunity that did not come to full fruition. In this instance, Stephanie sited faculty turnover as her primary issue. One of her mentors was

no longer faculty in her department. She stated, "[research publication] was the path I was on with [my mentor]. That was before [my mentor] left and that was going to be our next step." Various participants also sited faculty turnover and shifts in faculty positions within departments as having an impact on their research behaviors and abilities. While most students stated these changes worked against them, Michael stated that his mentor's positional shift actually granted him and other more access to his mentor. Michael stated that his mentor left a research position in order to focus the attention solely on the faculty assignment. This gave Michael an opportunity to build a relationship with his mentor. When prompted to discuss the significant changes between his current relationship with his mentor as opposed to his earlier relationship, Michael began describing the difference by stating, "Well, now he talks to me." Michael also stated that he receives more attention from his mentor; including feedback on writings, suggestions for ideas, and more communication.

Stephanie reported the opposite affect when an influential faculty member left her department:

> I think that maybe that has stifled a little bit of the progress and the growth because it's changed the dynamics, and the logistics, and administration at the university. Because several of our professors, when we began our coursework that was the plan: to attend conferences with some of those professors. Ride on some of that leadership.

Betsy stated that she was drawn to her current mentor due to the mentor's stability in the department. She further purported that the amount of faculty turnover in her department made finding a mentor a bit more difficult; and when in search for a mentor she was "sort of looking for somebody who I thought would be stable." She stated that faculty turnover made her search for stable mentoring difficult. Betsy explains:

> People were leaving. We had numerous turnover in the department. In fact, I was trying to count how many of the professors that I had were still there. And I would literally have to count and get back to you at some point.

Betsy did not provide the number during a follow up discussion. However the perceptions of the turnover and its effect on her research attitudes were pertinent to this study.

Another commonality among interviews was participants' proclivity to make a distinction between the research guidance they received for their dissertation and the guidance they received for other projects (research conferences, grant writing, journal publications). Less than half of the participants recalled experiences in which they were mentored for both dissertation and publication. Only Michael, Emily, and Beulah stated that they had engaged in research other than dissertation and that their mentors encouraged or collaborate in that process. These experiences support RTE theory's characteristic of engaging students in low-risk opportunities to do research.

Guidance through a journey. Participants also referenced research processes and experiences as journeys through which a mentor guided them. While anxiety and missed opportunities were frequently expressed in the absence of mentoring, positive experiences were recounted in the event that a faculty-student mentoring relationship was strong and present. Beulah positively recounted research experiences with her mentor. The experiences were relative to her dissertation as well as other research opportunities:

> My mentor guides me through the process of grant writing or any publication we may be working on. In that way, I am able to learn and glean information from my mentor. Like I said, with my discipline is a little bit more fluid and we have a lot more room to not be

> so black-and-white. They can guide me. I can fall, but my mentor's going to be there to catch me, to guide me, into put me on the right track.

Miranda echoed Beulah's expression of being guided properly in reference to her dissertation but continued to express a desire for guidance towards alternate research opportunities such as publishing in scholarly journals:

> I have had a good guidance relative to my dissertation. But I've asked, I mean I worked here on campus and I've tried to say, "I know I need to publish. I know I need to do research." I don't even know how to begin and I'm in year three. I'm almost done with my dissertation. I don't know how to begin. And it's not for lack of asking.

Informants in the focus group agreed that advisors ad made them aware of journals' calls for papers. Desire for increased guidance differed. Some informants such as Miranda stated that they were unsure of where to begin in terms of producing a document for publication. Other participants shared experiences in which they felt they may have had a document that was on the precipice of readiness for publication submission but failed to receive guidance on submission processes. Alfred confirmed that he had received research encouragement from faculty concerning his dissertation as well as other research opportunities. Whereas he described his dissertation process as a journey for which he had guidance "from day one," he also expressed that "it would have been great if there had been more guidance along the way" when it came to possible opportunities for involvement in research.

In group discussion, Alfred reacted to Emily's research experiences with publishing outside of dissertation. In response to Emily's experiences about research mentoring inside and outside of her dissertation process Alfred interjected that people in his department "didn't get [that type of mentoring]. We didn't get that guidance early on."

Beulah discussed how her mentor has shaped her dissertation process.

> My mentor has been able to help direct my research as far as methodology, theoretical constructs to look at, things that I wouldn't even think about looking at. My mentor has been able to guide me, not necessarily laying it out for me on the table, but steering me in the right direction of things that I need to think about and maybe explore as far as formulation of my dissertation . . . having a mentor is key to navigating a program such as this.

Emily agreed that her dissertation chair played a substantial role in her dissertation development:

> My advisor, yes, has been very instrumental in the framing of my dissertation. My initial draft was—yes. It wasn't what it is now. So he has been very instrumental, you know, even coming up with ideas and areas to go do research. In my lit review [my mentor suggests] what topics to do.

She further describes her perception of the benefits of receiving help from advisors as early as possible in a doctoral career in order to maximize research productivity:

> Getting directions from your advisor immediately when you start the program from day one: students who have got that relationship and help from the advisor, and direction toward the end goal from day one have ended up being more successful, meaning they graduate faster. People who probably have more publications and the pretty much pick their milestones compared to students who pretty much have to find their own way. If you have to figure everything out for yourself, what area you're going to do, what research area you're going to work on, you just have no idea. That's a whole semester to figure it out…basically advisors who are more involved tend to get their student out more successfully and on time than advisors who are not so involved. Because if they just wait

> for things to happen on their own, the student eventually suffers because they are here too long and they probably finish with not as much exposure as they would have had if the professor was more involved with them in the first place.

In the group discussion, Miranda agreed that her dissertation process exposed her to positive guidance, stating, "They've really walked me down that path very well. That was excellent from that point of view." However she felt differently about research guidance she had received in pursuit of professional publications: "As you go through, it says both [dissertation and professional publication] are equally important. You've got to have both and yet I am finding myself facing walking out of here with one but not the other."

In individual interview discussions with Michael, he also mentioned the need for guidance through a process to ensure the student in a mentoring relationship can "move forward." He stated:

> Graduate school PhDs is kind of wide open. It's kind of broad, so you do need some guidance because these people [faculty] have done a lot of research. They have experience. Most of us don't, so we just need to be guided a little bit.

Many of the participants described their ideal or current mentoring experience by acknowledging research as a step-by-step process or "journey." Participants purported that this process requires guidance by a more experienced researcher. These experiences support the presences of the instructional tenets of RTE theory: teaching various approaches to research and teaching statistical methods. Participants appear to rely on their faculty mentors to provide the support necessary for doctoral student to begin their research endeavors. However, respondents also shared the responsibility of initiating these types of relationships with faculty members.

Mentee responsibility. The nature of RTE theory places the primary responsibility of creating a research environment for doctoral students on the actions of the faculty in the departments and the leaders of the universities. However, a consistent theme among participants was the responsibility that mentees had to establish ownership of their scholarship, seek exposure from strong mentors, and capitalize on opportunities when they present themselves.

In an individual interview with Maggie, she discussed her challenges with capitalizing on research opportunities:

> I think there has been a couple of opportunities that have been there [for me to engage in research], but for my own personal reasons, time limitations and the fact that I work full time, I haven't had the opportunity to engage much in those opportunities…I have not been engaged with faculty as I could have been. I think that if I wasn't working full time, I probably would have tried to create some research opportunities for myself. The mentee has some responsibility to reach out to be mentored. It's not just for the mentor to come wrap their arms around me and say, "I want to be your mentor." It's also for me to extend my hand or open my arms and say, "I need your help. I need you to mentor me."

To extract additional information concerning Maggie's response, the participant was asked expand on her expectations from herself and her mentor. She responded, "I try to temper my expectations, but also make sure that as a mentee I'm being responsible to reach to [my mentor] for that help."

In the group discussions the topic of mentee responsibility emerged when respondents discovered they had a variety of experiences both good and bad when it came to mentoring. One participant began to discuss different things that the other colleagues in the group discussion

could do to improve their visibility. The suggestions heavily echo the sentiments of mentee responsibility. To gain more research experience Emily suggested, "the key things is for you to go on yourself and find those papers that have been published. Analyze them, dissect them, and try to frame your own ideas and your own research along those lines." Then she recommends that the student seek guidance from the mentor after the work is done stating, "once you have some type of structure, then you can solicit help from your advisor. Now that you have it framed, the least they could do is help you with it." Emily did have experience with research and her dissertation chair had given her feedback on research efforts other than her dissertation.

In response, Alfred agreed to the advice and accepted that he also has a role in shaping his own research behaviors in addition to faculty mentoring:

> That's something that we should be presented with on day one. Here are all of these people and all of these resources to help guide you along the way, including professors. Because right now, most of the burden is on our professors; unless we do like you [Emily] say and do take more initiative and go out there, beat the bushes, shake the trees, find these people, find these conferences and push our way into them.

Beulah shared her experience with mentee responsibility. She assumed that mentors desire commitment and might wait to develop a relationship based on the production of the mentee's work or progress. According to Beulah's mentoring experience, she stated, "I had to, for a lack of a better phrase, I had to prove myself. Then I was given more responsibility." Emily also added that there were "some things that you [mentees] should and could be doing to help yourself, get published, and to develop yourself. To build the right relationships along the way." Beulah and Emily both shared experiences in which their mentor had provided them with

feedback on other research projects. This is demonstrative of RTE theory's tenet: reinforcing students' research efforts.

In his individual interview, Michael also discussed the importance of mentee initiative in research experiences. He states that even though his mentor encourages him to figure things out on his own, Michael understands that "it kind of makes you a little more proactive to go seek more and learn from your mistakes." Betsy's individual interview also relayed a similar theme. Her observations on mentee responsibility detailed an instance where a colleague would not take the advice of a mentor and insisted on pursuing a research topic that was considered unfeasible. She stated:

> I also have a colleague of mine who has a particular topic that he wants to do and [professors] have told him that was a ridiculous topic. And he just did not want to let it go. So he's probably having a bad [mentoring] experience. But it's not the professors or anybody else. It's him.

Similarly, the group discussion's focus on mentee responsibility was coming to a close when Alfred appeared to have a revelation. With little context and a silent room he simply stated, "So, it's our own fault. [Laughs] We're guilty."

Emily reassured the group that seeking additional resources to enrich research mentoring through collaboration is necessary.

> It's really hard when it comes to publishing, but the hardest thing is for you to go out there and find that person you want to work with and do whatever it is you could do for them to listen to you. If they are busy, they could give you a graduate student who is publishing, and they could help you or you could collaborate with them to do something.

Mentee responsibility was a strong theme that emerged from the conversations and led to an equally interesting theme of peer mentoring and interdisciplinary collaborations.

Division of responsibilities: having a career during matriculation. In addition to responsibilities to the program and to developing adequate faculty mentoring relationships, many respondents in this study also had a full time job. This provided an additional barrier to fully searching for research opportunities in the campus community.

Maggie stated that this fact had an impact on her ability. She asserted that if there were more opportunities to do research, she would not have to divide her loyalties between her career and her education. She stated:

> That's kind of what I'm saying earlier like creating some opportunities for people to do research that they want to do because if there were opportunities, I probably would quit my job and do it. Honestly, because I am interested not so much in the research, but what research produces.

In an individual interview Lisa also stated that her career delayed her research abilities, attitudes, self-efficacy and behaviors.

> We have a limit: a time period in which we have to finish the program. It's five years. And I was approaching my fifth year and I thought to myself "you've come too far. You have to finish." But how was I supposed to finish? I had just gotten a new position at work and I was trying to settle into that job. And coming home at 5 o'clock; I was lucky to maybe get home and write before 6:30.

Lisa went on to detail how her new position at work interfered with her commitment to her dissertation. In addition to being "emotionally exhausted" by her new responsibilities at work she stated:

> I just could not write [a chapter] for my dissertation. I just couldn't do it. And my chair was just like, "give me what you got." And I was just like "I have nothing." I just couldn't manage to write.

Betsy's response to career's influence on matriculation was different. She did not provide responses that could be analyzed to state that her career interfered with her ability to do research during matriculation. As a fulltime employee, Betsy stated that faculty within her department primarily encouraged that doctoral students interested in pursuing a career in higher education should engage in research activities and publication. Betsy independently decided that she could utilize the research skills that she developed during her doctoral degree into her career in the near future. She revealed that she has intentions to use parts of her dissertation and apply it to her career. This aspiration is directly related to the RTE theory's tenet of understanding the marriage between science and practice. Other than Betsy and participants interested in pursuing a career in higher education, no participants had been shown an explicit relationship between their careers (practice) and their research (science).

Mentoring's Contribution to Research Self-Efficacy, Attitudes, and Behaviors

Despite the research challenges faced by participants, many reported that their mentor did provide them with additional confidence in the participants' ability.

Attitudes and behaviors. In Michael's interview, he revealed that he believed that independent of a mentor or collaborator, he had a mid-range confidence level in his ability to conduct research. He stated:

> Independently? I will say on scale from low, medium, high, I will place in the middle. Yeah, there are a lot of things, I don't know especially with my [field of study], so yeah, I feel like I still have a lot more work to do.

He did however feel confident that if a tenured-track position required him to engage in research he would be capable of doing it. He further credits his research mentoring relationship for the amount of confidence that he did have.

Stephanie's interview revealed that her mentor also contributed to the development and strength of her dissertation topic. She stated:

> I was not even aware of a study where those professors have already developed an instrument to help [with my dissertation]. I had no knowledge of that. So, when my dissertation chair followed the direction in which I was going, she immediately said, "Well, have you looked at this? Have you considered this?" I mean, from day one, it had been that way.

Stephanie reported consistent satisfaction with her research and career mentors. She also reported confidence in her research ability. When asked to rate her ability to conduct her own research on a scale (one indicating she had no confidence in her ability and ten indicating total confidence in her ability) she stated:

> I would have to say between an eight or nine. The program has—yes, we've gone through a lot of changes, but it's a very rigorous program. It is doctoral program that you have earned and I mean you have really earned, because you have to know what you are talking about. When we did our prospectus; my dissertation chair [told us] "you have to have this right; you've got to know these studies. It has got to be your own."

Similarly, Beulah stated her mentor had been instrumental in her research experiences in dissertation research as well as research experiences beyond dissertation. She also spoke in personal terms about the relationship she had with her mentor. Beulah purported:

> I wholeheartedly believe that if I did not have my mentorship with my mentor and the lessons that I learned, I would not have been able to make the growth in three and a half months from changing my dissertation topic to almost walking out with a completed proposal if I haven't had a direction from my mentor . . . I am very thankful to my mentorship that I have received. I don't think I would have made as much growth in the program without my mentor, and I am very thankful for that.

She continued to describe the personal affect her mentor had on her private life while Beulah attempted to conduct research. Beulah continued:

> If there was just something going on, if I was literally having a nervous breakdown, I knew I can call my mentor who to vent. And they were there for me to listen to me and to help put me back on track; whereas, if someone who didn't have that mentor, I am not certain they would bounce back in certain situations that I have gone through. So having a mentor is very key to navigate a program such as this.

Maggie's comments in her individual interview revealed that she did have firsthand experiences with strong research mentoring at the current stage of her dissertation process. However, she stated that she idealized her department producing additional experiences to assist students in their research experiences in order to positively affect their self-efficacy:

> I think they could be more engaged in research and solicit our assistance on their projects because I think, you know, there's quite a few faculty members that have interest that are also my interests and so, if they were to apply for a grant to do a research project and then invite students to participate with them like that would give me some preparation or at least equip me to do research because I would be learning from them.

Multiples in mentorship. Participants expressed instances in which their faculty mentor may appear more invested in other projects or mentees. Faculty with extensive responsibilities to other mentees placed the participants in situations where they had to bode their time and figure a way to attract a level of attention they desired in order to engage in research mentoring. Alfred expressed in the group interview that he saw colleagues in his department who were able to keep the attention of faculty members and gain research mentoring experiences. But he felt that he was unable to assert himself in research opportunities. He stated:

> I have other people that I know of in the department who have going to conferences and made presentations, who have done things there. I think in the back of my mind, "well I wish I could have done that," but I don't know how to get my name in the hat.

Michael repeated this theme in his individual interview. He observed the behavior happening to other people in his department, and revealed that he also personally experienced a hierarchal approach to mentorship. He stated his experience in the following manner:

> I have noticed students in my department tend to gravitate to [certain] professors; they tend to work together, get the job done and move on. My situation, a lot of the [other] students who work with [a professor in the department] it's like—I don't want to sound negative, but it sounds like politics. (Speaking as the professor's psyche) "Okay, I am going to take him first. [To one student] You wait and [to another student] you need to read more. [In reference to a third student] You need to do this before I can get to you. So, stuff like that.

Michael further observes colleagues with other mentors appear to have more opportunities for development than others. Although his department sponsors an annual conference in which all

interested students may receive sponsorship, there are other opportunities that Michael may miss due to lack of funding.

> They pay for other trips and everything. For me, that would be a problem. I have to find my own way, pay my own money. It's like they don't keep me in the loop. You have to figure out on your own. I want to go on this conference and this and that. I would also like to be more involved in my schoolwork, my research. That will help me. But, it's like [my mentor's] whole thing is "that's the way I have learned and that's how you are going to learn to make you stronger."

When prompted to discuss where he stands in the mentorship hierarchy, he simply stated, "There are some students that are under him that publish with him more frequently than others, okay?" Michael expressed that even distribution of a mentor's attention to all mentees would assist in enriching research experiences. He purported:

> So just kind of give people an equal opportunity. Don't say, "since this person is in mathematics, I am going to work with them and the psychology student I just let him figure it out on his own" type of thing. Just kind of make everybody feel that they are on the same playing field because at the end of the day, we are all in the same department. We are all working around towards the same goal. We are all going to have to work together.

Miranda expressed that having research interest similar to your mentor or simply adapting to faculty's research interests was a way to create the strongest mentoring relationship. She stated:

> Students have gone [adopted faculty research interests] and then those have been very symbiotic research relationships where it's about that particular study. And so those, to me, seem to be the strongest and really most true definition of mentoring. Kind of when

> those coincide . . . I think those are probably the exception rather than the rule would be my guess; or maybe I would even suggest that maybe people who are not sure what they want to do, will gravitate towards one of the professor's interests simply because it's a way to get to where they are going. Like, "that's sounds good, let me go on, let me kind of hop on this train."

On the other hand, participants also expressed they had developed relationships with multiple mentors to assist in supplementing their research experiences. Maggie engaged consultants as well as an additional mentor, plus maintained a relationship with her dissertation chair in order to provide her with a denser research support base. In comparing and contrasting her secondary mentor to her dissertation mentor she stated:

> So, I think as I sought out help from him and he gave me suggestions, it's sort of was more organic answering my questions about different research paradigms or different research strategies or things that I needed to know that helped me get to my topic—my dissertation topic . . . I think with the chair, it was more of I saw something that she possessed that I needed, which was honesty, being very direct and forthright and also, very constructive in her criticism, you know, and I wanted that. I wanted that from my process, you know. I don't necessarily know what it will be beyond the process, but for the dissertation process, I wanted that and so, I asked her to be on my committee. I think even before I asked her, she took interest in my topic and she also took interest in, I guess, the passion that I have for my topic and to me that's equally as important. You don't want someone to mentor you who really doesn't understand like why you even want to write about this. So, I think she understands the passion that I have for my topic and she's willing to give me what I need, which is constructive feedback, timely feedback

> and then direction and I think that's when I knew that I could see her as a mentor and not just my chair. [Pauses] And she answers my questions.

Faculty role modeling. Respondents also expressed that faculty role remodeling of appropriate research behaviors occurred. This is directly related to Gelso's (1996) RTE theory. Participants who were engaged in research or dissertation asserted that they learned how to behave from their interaction with their mentors. These experiences affected their ability to do research and provided them reflective opportunities to evaluate their overall mentoring experience. Michael purported that he was learning about research from his mentor and that his mentor had a strong reputation for publishing. However, Michael did feel that his mentor's strong research background overshadowed mentee's opportunities to explore his own research ideas.

> He feels like, [speaking as his mentor] "my way is always the right way." I feel like—not to sound negative but just—kind of like a puppet. [Speaking as his professor] "this is my research even though your name is on it, but this is my research, you are doing my work, we are going to publish it, so whatever I say, you do." I have contributed some ideas and they always get thrown out, and maybe 10% of what I contribute is good but it gets changed. So I just feel like I am just a worker. I don't feel like a lot of my ideas—some of them are okay, but a lot of them like, [speaking as his professor] "well, I have been doing this for a 30 something years, so we are going to do it my way. And you can't argue or say this is—I think this is better."

When prompted to discuss whether Michael was being mentored to pursue his own research interests or to follow in his mentor's footsteps he believed that he was being mentored to follow

in his mentor's footsteps. He did not disagree that it was an effective way for him to learn about research.

Maggie also expressed that faculty role modeling gave her a positive impression of research behaviors. She purported:

> Faculty in our program who have engaged in a research, I think, have added some understanding and comfort level with research. I work in an academic medical center environment where research is ongoing all the time and people have dedicated their life to conduct their research. There is some intimidation around it, but I think when I started the program and I saw faculty that were doing research and faculty who do social justice or educational type research and they still sort of practice. You know, they're practitioners, but they're also professors and scholars. I think it took some of the intimidation away from this whole idea that researchers are maybe beyond understanding or beyond the understanding of the common scholar if there is such a thing. To answer the question, I think that informal mentoring that I have received has added some of my confident level.

Maggie's account of faculty role modeling is relative to Gelso's (1996) RTE theory; but she also addresses another element of the theory that other participants did not express: the tenet of the theory that suggests faculty should demonstrate the marriage between scientific inquiry and professional practice.

Perceptions of mentor-mentee dyads. Participants recalled that their mentors had developed a reputation for maintaining invested interest in mentees. Informants further stated that they were searching for these types of mentoring relationships. Mentors' inquiry of student interest was valued. Participants valued a mentoring approach in which they felt they were being

mentored as a student and as a person. Beulah stated that her personal relationship with her mentor gave her certainty that the research relationship would continue in the future. When prompted to elaborate on the relationship, Beulah asserted:

> [My mentoring relationship] helped me grow tremendously through this process. And I know that my mentor would always be there if something isn't quite right where I have an issue or a concern. My mentor is always there. I can always call on her.

Betsy stated that her research process has shaped her perception of her mentoring relationships in the future. As a future mentor, Betsy aspires to make improvements in faculty-student dyads based on her perceptions and experiences. She stated:

> One of the things that I plan to take away, if I have the opportunity to be somebody's mentor is to be very clear with the person who is wanting to be mentored; that you have similar ideas of what that means and that it is someone who wants to be mentored and not somebody who wants to have you on a friend and put you on a résumé. That it is somebody that's really open to suggestions and that can also help you grow. Because certainly I don't know it all you know, I would hope that my mentee would share with me so I could grow as well.

Although Maggie did not feel that she had a mentoring relationship with a professor in her department, she did consider that professor a research role model. She stated:

> I know he has a lot of experience with research, you know, creating and being involved in some really great research studies. So, I would look at him too as sort of a research role model just because I know he can do it. He's done it and he has the résumé for research in his background.

Emily positively recounted the reputation of her dissertation chair in maintain research relationships with his mentees after graduation. Emily purported:

> Historically my advisor has kept contact with all his students. He pretty much knows who is working where, who just got a promotion, and who just published. He knows what's going on, who just got married, all of that. He pretty much keeps in touch with all his students; and they still publish. There is a student who just finished in this summer, in May and he has since published two papers since he is finished in six months. And he always sends it to my advisor to proofread it because they publish together. If you're willing to do the work when you leave, he is available. Yes, he is open.

Supplementing Research Training

Many participants expressed recurring experiences with reliance on peer support and guidance in the absence of an ideal research mentorship. Other participants indicated that they felt professors might be too busy to help them and created ideal peer mentoring scenarios. To address this need, participants credited collaborating within the department or seeking interdisciplinary experiences as a method of supplementing faculty-student mentoring dyads.

Peer Collaboration. Maggie stated faculty could inspire more opportunities for student researchers to collaborate within her department. Maggie stated that other colleagues outside of her university have access to collaborative opportunities that assist doctoral candidates in gaining research experiences. In her ideal scenario, Maggie expresses a desire for faculty to initiate research collaboration among students:

> Even if they are not engaged in it, maybe create some opportunities. Or encourage opportunities maybe groups of students to do research. Even if we came up with a way to have research labs or we do a research project and there's maybe a group of students who

> are running the projects all year long. Then we could publish articles about those projects. So I think just someone that kind of takes the lead and has an interest in research or experiences doing research. It could just be a few students who are interested in it but at least they have an opportunity. I feel like I would be more comfortable with research.

Emily also discussed the possibilities of peer mentor research relationships in the group discussion. She expanded her definition a mentors to include "a person [who] would be maybe a year ahead or two or whatever. A senior student in the program . . . it doesn't necessarily have to be your advisor."

Miranda had extensive peer mentoring experiences that she credited for addressing some of her concerns about her ability to do research.

> I came to rely on a handful of my peers, where we were all in situations where we were a little more on our own. So we used one another to kind of say, "hey, I am stuck with this" or "what are you doing about that?" [We] used one another to be that sounding board or that person to sort of help you figure it out . . . I think in absence of that strong mentorship, in not having found that, I think that's why I gravitated to a strong group of peers saying "all right, we'll—we don't have that because we don't have that, so let's just help one another."

When inquiring about research she stated, "I have actually had better responses, again, from fellow students who published" than she did from faculty-student interaction. Not only did she gain additional information about research from her peers but she has also been encouraged by her peers to engage in research collaborations:

> I have had conversations, once again going back to peers, and I've had that conversation with peers who say, "Hey, once we are done, let's publish together" or "let's do some stuff together." But I've had more of that forward-looking conversation with peers who, to me, have been much more motivational.

Betsy's individual interview revealed that she does not collaborate on research with her peers but does gains support and instruction on research procedures from her colleagues. Betsy states,

> One example would be when I was going through the IRB approval; there was a hiccup that happened that I had not been anticipating. And so, of course, I shared that with everybody else; and somebody else shared about something that happened with them. So just trying to help each other get through the hoops that have to be done. In my cohort in particularly, all of us have such diverse views about what we wanted to do for our dissertations, there really wasn't a lot of collaboration or sharing because our topics were so greatly different.

Of note is that Betsy's research mentor/dissertation chair is not a faculty member from her department. In response to the faculty turnover in her department she researched and sought out leadership a faculty member from a different department.

Collaborations across the disciplines. Emily also discussed peers as research role models and purported that she finds collaboration with these colleagues to be a helpful way to gain more research experience:

> The biggest thing is to press the hole, find a colleague that you can collaborate with, especially if you can't do it on your own. I know some students who are great and can publish by themselves, they don't need anybody's help. I know people who just publish from class projects and they just publish, publish, publish. But I feel with somebody who

> needs help, if you are nervous publisher, then you can collaborate with a colleague who has published before and that [is] probably working on their projects.

Emily found this method of gaining research experience to be helpful to her and other people in her department.

In an individual interview with Michael, he stated that he also finds collaboration with colleagues to be a proven method of expanding research experiences. He described the benefits of attending research conferences. He stated that type of exposure

> is a good for opportunity because you never know who you can meet. You could meet somebody that offers you a job; or you can collaborate. There are a couple of students that work with [another university] because in our school, we don't have as much equipment. So you might meet somebody, work with them and come up with something really good.

Some participants did report that collaborating with peers and individuals in other departments allowed them to supplement their research experiences during their research development phases. Other participants, who reported a higher interest in pursuing or maintaining their careers outside of higher education, had a lower proclivity to discussing peer mentoring and various collaborations.

Participants all reported having research mentoring experiences with their dissertation that assisted in the achievement of development or completion in their research.

Faculty attempt to improve culture. An additional emerging theme in the study was observance of and desire for faculty attempts to improve the research culture in the departments. Participants stated that they had witness faculty members implement programs and make

departmental adjustments to respond to student need. Alfred admitted that his department had found

> A gap that had been identified before our cohort came. And because of that, the faculty came together and decided that [they] would develop new courses . . . So I imagined sitting in that classroom that somewhere along the way, some gaps in the mentoring relationship between faculty and the students had been identified and this was one approach that they were taking to try to close that gap.

The acknowledgement of the efforts of faculty members reiterates participants' ideals that responsibility of research culture creation is a shared one, and that select faculty are exhibiting obvious effort to contribute to such a culture. Alfred also stated that even though the mentoring was still in development, the faculty had stated to him that students in the program "should be publishing."

Michael's comments in his one-on-one interview revealed that his department does ensure student exposure to research:

> From time to time the department takes all of us on conferences. So you go out there, show what you are working on, and this is a good way to network with people . . . we have annual conferences . . . and the department says whoever is interested in going, they will have paid for it. Some are willing.

However, Michael admits that were the department is willing to sponsor extrinsic opportunities for exposure to research, the research instruction inside of the department is just beginning. He stated

> I feel like in our department—I mean it's slowly changing. We have a research class now on Wednesdays where the professor has given us tips on how to research, what to do, how to become a better researcher. To be honest with you, a lot of us don't know.

Michael extended the responsibility for research culture creation to other university-wide departments. He purports:

> The graduate school should have an umbrella, like a research class that any grad student can sign up for. Actually, not even can sign up for: make it mandatory. Anybody coming in [should] at least take a semester of it, just to improve.

Similarly, Betsy expressed some progress in the culture of her department as well. She stated in her individual interview:

> I can say that our cohort sort of expressed some concerns with the program and the dissertation process. Who did the advising and all of that was very confusing. So I do know that in the cohort behind us and the one behind them that [the university] has tried to make a more dedicated effort to be clearer in communication. So I feel like that's a great thing that our voices were heard as a result of that. And I feel like even now—through emails—I feel fortunate that I had gotten a good chair from the beginning. But even now as I see through emails they are trying to make that right for some students where it has not been very easy for them.

Although there is progression ensure that research culture is properly guided, respondents' comments suggest that progress is either slow or just beginning.

Summary of Findings

A reoccurring theme across departments that arose was participants having multiple mentors, mentees taking responsibility for research experiences, the effect of employment on

research, peer mentoring and collaborations, and mentors division of time among multiple mentees.

Participants expressed that they had witnessed colleagues in their departments who had positive faculty-student research relationships as well as colleagues who had received the opportunity to engage in research conference sand presentations. Another participant stated that a lack of funding opportunities in comparison to his colleague prevented him from obtaining additional exposure to research.

The experience of having multiple mentors did not suggest that one mentor was inadequate. However, having multiple mentors did grant those participants with a substantial feeling of fulfillment when it came to their research projects. More frequently emerging was the theme that mentors had multiple mentees and did not always possess the adequate time to devote to all participants. In instances of mentors having multiple mentees, participants either accepted the hierarchal approach to their faculty-student relationship or were unaware of how to establish the type of relationship that would afford them a research opportunity. Participants who subscribed to this theme also stated that they had asked for the guidance and resources necessary to gain research experiences, but they perceived that research guidance had yet to be afforded to them other than through mentoring about dissertation. Other respondents understood that their mentors had a mentoring hierarchy that was established and accepted their place in that hierarchy. Michael, Maggie, Miranda, and Alfred all stated that their experiences with mentoring revealed instances in which other students had precedence over them in terms of acquiring a mentor's or advisor's assistance with developing research. This hierarchy suggested that there were respondents who would be mentored first and that other students would be

mentored and given more opportunities to gain research experiences after they had proven a commitment to the faculty research mentor.

The concept of proving one's self was also relative to the emerging theme of mentee responsibility. In respondents' experiences and perceptions, mentors were not as willing to mentor the students unless a student proved to be serious about research or if the student had research interests that were similar to the mentors. Respondents reported that colleagues had to demonstrate similar interest or adapt to the mentor's research in order to establish and maintain a mentoring relationship that would result in collaboration. In the event that a doctoral student has her/his independent research idea, the likelihood of engaging in a research mentoring relationship with faculty member for the purposes of the student's research interest was perceived to be less likely.

The dominant emerging theme of peer mentoring was commonly discussed whenever participants recounted experiences of how they supplemented a negative mentoring experience. I some recounts, respondents were not receiving adequate research experiences; in others, peer mentoring occurred prior to a faculty-student relationship or occurred more frequently. Whereas mentor relationships are initiated by the mentor or mentee, peer mentoring relationships developed with ease. Respondents often stated that they relied heavily on their peers in order to obtain information about research. Respondents also reported that they utilized collaboration with colleagues in other departments to engage in research.

The next emerging theme was mentee responsibility. Despite a desire to be mentored, respondents had a proclivity to stating that it was their responsibility to put themselves in a position in to except research mentoring and research resources.

Many respondents expressed a fear or concern surrounding research. They had anxiety or lack of knowledge as to how to perform research. Some respondents felt anxiety about beginning the research, but this feeling was eventually placated by research mentoring experiences. In some instances student did not follow through because of these anxieties and missed an opportunity to submit an article settings application. Insert quotes here.

Other students stated that they were unsure about the beginning of their research. Through their mentoring relationships, some improved. Other respondents still felt there was a gap in their abilities.

This seems to suggest that some participants are in a position to be mentored and other students or not. Though all participants received mentoring relative to their dissertation research, the participants who have full time commitments to their careers do not express a strong connection between scientific inquiry and professional practice.

CHAPTER 5

Discussion

While a substantial amount of literature addresses mentoring in higher education (Davidson & Foster-Johnson, 2001; Dodson, Montgomery, & Brown, 2009; Evans & Cokley, 2008; Fisher et al., 2009; Hollingsworth, 2000; Hollingsworth & Fassinger, 2002; Jowett & Stead, 1994; Knight, 2012; Kosoko-Lasaki, Sonnino, & Voytko, 2006; Lechuga, 2011; Lev et al., 2010; Ortiz-Walters & Gilson, 2005; Poteat, Shockley, & Allen, 2009; Strayhorn & Terrell, 2007), literature failed to provide discourse on mentees' perspectives on research mentoring experiences at Historically Black Colleges and Universities. The purpose of this case study research was to explore the research experiences of doctoral students at two HBCUs.

Inferences of Analysis

Assessing students' perception of the research climate and its effect on students' research abilities and behaviors at HBCUs can assist in addressing any needs that will increase the empowerment of graduate student research self-efficacy. Gelso's research training environment theory emphasizes the importance of both practicing in a profession and contributing research to that field. This theory helped to shape the analysis, the worldview, and the central research questions to this study. As a qualitative instrumental case study, both focus groups and one-on-one interviews were utilized as a strategy of inquiry. Participants in the study were doctoral students obtaining their degree from two universities in the state of North Carolina.

Relevance to the Theoretical Framework

Of the ten tenets of Research Training Environment Theory, most of them emerged during coding. The tenets that appeared were *low-risk opportunities to conduct research,*

teaching various approaches to research, reminding students that all research is flawed, faculty role modeling, and *teaching a variety of statistical approaches*. *Encouraging students to generate their own research ideas* was a characteristic of the theory that had both negative occurrences, meaning respondents' research ideas were ignored, reworked, or dismissed by the faculty mentor.

Additionally the characteristic of *reinforcing research efforts* gained negative occurrences among participants; however, some positive instances were recorded. Respondents stated that a faculty member presented the initial idea of research but the reinforcement of completion was not addressed. This characteristic proved to be important. Respondents who did receive feedback from a professor successfully pursued research endeavors. Whereas respondents who never received further instruction from faculty after the initial research idea was presented failed to pursue the opportunity.

Emphasizing the social element of research was a characteristic that participants consistently mentioned this in discussions (peer mentoring and collaborations). The RTE theory is based on the notion that faculty enforce the characteristics of the theory for the students; students do not create an environment for themselves. It is for this reason that faculty-student mentoring relationships are the central focus of this research. As a result, the responses generated from this study frequently mentioned the social element of research but only from participants and never from mentors. In fact, the focus group discussion included one participant mentoring the group on ways to initiate peer collaboration in order to enrich research experiences in the event that faculty mentors were not generating opportunities. With this theme heavily emerging in this research, the topic of peer collaborations among HBCU doctoral students is a potential avenue of future research.

Another RTE characteristic *teaching research in practice settings towards the end of a program*, was heavily apparent. All participants had to complete a dissertation in order to complete their program. As a result, most discussed research in terms of the preparation for dissertation.

Finally, there was an occurrence of *emphasizing the relationship between science and practice*. Again, five of the nine participants split their responsibilities between their doctoral studies and full time employment. Those who were employed full time believed that their research could potential be utilized in their employment positions, but discussed no encouragement from a mentor, faculty member, or advisor on ways to use their research skills in their careers. Participants were not instructed on the relationship between the research skills learned during their doctoral matriculation and its immediate application to their careers. While the informants recognized the potential, the advisors had not explicitly discussed the potential relationship between the mentee's research and the practical application of that research at work. A participant recognized this disconnect and stated that she felt that she training herself to be a scholarly practitioner but not a researcher. Another participant stated that research after graduation was only encouraged for students who desired employment in higher education. This could be a strong implication for the lack of minority research funding and tenured faculty positions. If doctoral student obtain fulltime employment without the intention of or encouragement to exercising the research skillset that they have obtained during their doctoral matriculation, a gap could not only continue to exist but widen over time.

The following chart illustrates the frequency of response related to RTE theory. Faculty as positive research role models, teaching a variety of approaches to research, instruction in research designs, encouragement to look inward for research ideas, and opportunities to practice

research towards the end of the program had frequent reference by multiple participants. In contrast, one tenet of the theory (emphasis on the relationship between research and industry) received seldom mention in the study. The other tenets of the theory received occasional mention by a few of the participants.

Table 4

Frequency of Outcomes of the Ingredients of RTE Theory

Interpersonal	Instructional
Training research through low-risk opportunities	Encouraging students to generate their own research ideas
Supporting students' research efforts	Teaching a variety of approaches to research
Emphasizing the social elements of conducting research	Emphasizing the relationship between science and clinical practice
Having faculty serve as role models of positive research behaviors	Teaching research design
	Teaching that all research is flawed
	Instructing student on research execution at the end of their program

Note: Green indicates theory ingredients frequently mentioned by many. Yellow indicates theory ingredients occasionally mentioned by some. Red indicates theory ingredients hardly mentioned by any.

The overall purpose of this study was to collect the research experiences and perceptions of doctoral students at historically Black universities. The research questions for this study were as follows:

1. What are students' experiences with faculty-student mentoring?
2. How do their mentoring experiences affect their perception of their research attitudes and behaviors?

3. Have these mentoring experiences exhibited Gelso's traits of research training environment theory?

Universities were chosen in the state of North Carolina. North Carolina has the highest number of public HBCUs of any state in its regional accrediting body (SACS). The participants responded as mentees and the scope of this study did not permit the mentor's perception of the research training in the university.

Experiences with faculty-student mentoring. Due to some of the limitations that participants encountered with gaining research experiences, most respondents credited their dissertation as their primary research project and their dissertation chairperson as their primary advisor with concerns to research experiences. With the exception of one outlier, all participants believed that they could have a more enriching experience with their faculty mentor or dissertation chair.

A variety of factors contributed to participants' acknowledgement of room for a more enriched research training experience. Some students believed that their responsibilities at home or at work interfered with their accessibility to faculty and to research relationships due to their time away from campus. These participants also believed that they were in a position to become a scholar and a practitioner but not necessarily to contribute to their field of practice by engaging in research after completion of their degree.

Those participants who did maintain a full-time commitment to their doctoral studies and did not split their time between full-time employment and school showed a high interest in research and scholarly development. However these were the students who were more likely to state that they did not have all of the research training necessary to prepare them for their desired level of research self-efficacy.

Experiences of engagement differed between participants. Only three participants were engaged in research projects other than their dissertation. All three of these participants were encouraged and guided by their mentor to engage in and complete these projects. Most participants reported that their dissertation mentoring was adequate and that their dissertation chair or committees were instrumental in assisting them with the required research.

Research mentoring's effect on attitudes, behaviors, and self-efficacy. There were two types of participants in this study: participants with a full time commitment to their doctoral degree completion, and participants who split their commitment between full time employment and their doctoral degree. Those with full time employment were less likely to discuss research anxieties or have low confidence in their research abilities. The participants who were committed to their doctoral degree full time without a simultaneous full time career appeared to be more to exhibit anxiety about their research abilities. However, these participants were also more likely to state that they were seeking a career in higher education and more likely to state their interest in pursuing additional research opportunities after degree completion. If students at HBCUs split their attention between their career and their education, this could be a factor that supports the assertion that research activity was not as important to minority degree attainment (Kniola, Chang, & Olsen, 2012).

According to Lev et al. (2010), mentees and mentors are likely to give differing reports on students' research self-efficacy. Mentors believe their mentees are more capable than the mentees believe they are in terms of research self-efficacy. Though the scope of this research did not allow an account for mentors' perceptions, participants did discuss the mentality of their mentors. The disconnection between mentee's belief in their research abilities and mentors' assurance that the mentee will develop the skill organically over time can create some research

anxiety among mentees. Furthermore, in the event that mentees are not an able to secure the support of a faculty mentor during their research endeavors, the anxiety that they exhibit can prevent them for completing their research tasks. The mentee then imparts the blame of the failure on both themselves and the lack of mentor support.

The findings of this study did support research showed that peer support among doctoral students permits them to navigate the challenges of matriculation (West et al., 2011). Departments may benefit from formally addressing the benefit of socialization. This would also support the theoretical framework's tenet that purports the social element of conducting research. According to West et al., peer mentoring shed light on how departments can actively support their students. West et al. also states that the dissertation chair's relationship with a doctoral student is a critical predictor of the student's academic success.

Implications

In practice, the research implied that departments should consider implementing peer collaborative opportunities among students. In order to address policy-level concerns about doctoral student research training, departments and universities should consider developing strategies to stress the relationship between practice and scholarship. Implications for leadership studies may include training that directs mentors to reinforce and follow-up with the research efforts of their mentees.

Future Research

The researcher chose to study HBCUs in the state of North Carolina because of the amount of HBCUs and the amount of doctoral programs available. North Carolina was compared to other states that are accredited by SACS. The state of Virginia has six HBCUs, and five of those schools award doctorate degrees (most of these universities are private). The state

of Virginia is also strong possible site for future qualitative research that addresses HBCU research mentoring among scholarly doctoral students (see Appendix E for list of Virginia's HBCUs).

In agreement with research (St. John, Hu, & Weber, 2001), more empirical data and national studies should use minority-serving institutions as research sites. Regional and national studies should take place to assess the progression and contribution of HBCU doctoral students. These studies can be utilized to move towards discourse that encourages these scholars to join the ranks of tenured faculty and consistently contribute scholarship to respective fields of study. As a result, additional funding could be afforded to minority serving institutions in the event that research productivity increases. However, it appears that the productivity increases based on the confidence level. And the confidence is relative to the amount of faculty support that is provided while novice researchers matriculate through doctoral programs at HBCUs. HBCU doctoral students who have matriculated from their programs may be a rich resource of information. With post-graduation experiences, these participants may provide adequate and reflective insight on their perceptions of research training environments' effect on their post-doctoral careers.

Additionally studies should be continuous and address instances of doctoral attrition. Di Pierro (2012) asserts that a lack of mentorship and research advice is listed among the top obstacles that doctoral students face in their journey (reported by the Council of Graduate School's PhD Completion Project). The ability for the mentoring relationships to gauge proficiency helps to ensure degree completion and prepares students to become (if they desire) future faculty. Scholars who have experience as a mentee have the ability to help others find direction in research and achievement (Di Pierro, 2012). Not only do faculty-student dyad influences doctoral students' research behavior but it also plays a role in attrition from the

program (Nerad & Miller, 1996). As mentors assist students I setting research goals they instruct students on research behaviors and ultimately utilizes mentor resources to pass the work on to the protégé. This type of mentoring cannot be formally mandated by a department (Nerad & Miller, 1996). Studying the narrative of strong mentoring relationship should be considered in future qualitative research.

Informants demonstrating a high interest in research did show a strong desire to establish strong and lasting research relationships their mentors. Leader-Member Exchange (LMX) theory can be used to further describe the relationship. LMX theory addresses an exchange between a leader and a member considering the success of the leadership is based upon the strength of the exchange between the expert and the novice (Northouse, 2010). Considering respondents' perceptions of taking responsibility for their research experiences and enticing an advisor to engage in a strong mentoring relationship with the, it could be valuable to qualitatively address dyads with this theory in mind.

A quantitative or mixed method assessment of multiple HBCUs is also a potential research endeavor. Utilizing the measurement that accompanies RTE theory is one possible avenue. There are also measures in clinical research self-efficacy and (the Clinical Research Appraisal Inventory) as well as general research (the Self-efficacy in Research Measure). Both can be used in order to assess student's perception of their ability. Once the Research Training Environment tool is used in addition to self-efficacy measurements, new empirical data on HBCU doctoral research environments can emerge.

Conclusion

In summary, the research experiences of doctoral students attending HBCUs in the state of North Carolina demonstrated three common occurrences:

1. Students personally experienced and/or witnessed negative and positive research mentoring. Variety in research mentoring and opportunities were limited to three of the nine respondents.
2. Mentoring experiences impacted respondents' attitudes and behaviors about research. Respondents shared responsibility with the mentor.
3. Responses demonstrated most tenets of Gelso's research training environment theory

Participants' responses did vary. Five respondents clearly identified a low-risk opportunity to conduct research. Low-risk opportunities may include instances in which student can gain research experiences in a minimally threatening manner, whether they are guided or they are collaborating with a colleague or mentor with similar or more experience (Gelso et al., 2013). The other participants solely discussed their personal research opportunities in terms of their dissertation. Almost all of the participants identified occurrences in which faculty had role modeled appropriate research behaviors, taught statistics, and provided students with various approaches to research. Respondents also identified that the research efforts were still in development in their respective departments. While respondents were encouraged to pursue their research interests, several respondents stated that their mentors did not reinforce such research efforts.

The lack of reinforcement of research efforts is just one of the three elements of RTE theory appeared both positively and negatively in the responses. Though group discussion heavily emphasized that research had a social aspect, no respondent purported that a mentor or faculty member emphasized this tenet. Furthermore, the relationship between professional practice and scientific inquiry was not present. Though this was apparent among most

respondents, it was strong apparent among respondents who had to divide their efforts between full time employment and matriculation of their doctoral degree.

Mentoring is the center around which effective graduate education takes place. Mentoring is a critical focus of graduate education (Quarterman, 2008). It is very possible that many of the gaps in literature about research at HBCUs can be addressed if research is applied to these institutions. Furthermore, understanding the perceptions of the doctoral students can provide a framework that determines how HBCU research will take shape in the future. In doing so, historically Black universities, research facilities, and higher education administrators will be more capable of fully comprehending the serves provided and begin to strengthen the pipelines that leads novice researchers at HBCUs to apply their perspective to a global audience.

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Appendix A

National Center for Education Statistics

College Navigator

Generated at:09/24/2013 11:26:30 AM from URL:*http://nces.ed.gov/collegenavigator/default.aspx?s=NC&l=94&ct=1+2&ic=1&sp=4&xp=1*

Name	Address	Type	Awards Offered	Non-Undergraduate Student Population
Fayetteville State University	Fayetteville, North Carolina	4-year, Public	Bachelor's degree;Postbaccalaureate certificate;Master's degree;**Doctor's degree - research/scholarship**	773
North Carolina A&T State University	Greensboro, North Carolina	4-year, Public	Bachelor's degree;Postbaccalaureate certificate;Master's degree;**Doctor's degree - research/scholarship**	1,713

Figure. General Information Research Sites Awarding Doctoral Degrees Based in Research/Scholarship

Appendix B

Contact Script for Participants

Participant Contact Script.

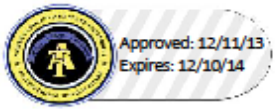
Hello. I am Nadielka Bishop, and I am a doctoral candidate at North Carolina Agricultural and Technical State University. My faculty advisor, Dr. Comfort Okpala, is the current chair of the Leadership Studies Department at NC A&T.

This message is meant to solicit your participation as an informant in my dissertation research. The purpose of this research is to collect the mentoring experiences of HBCU doctoral students and record their perceptions of these experiences' impact on their research behaviors and abilities.

Participants will engage in interviews with the principle investigator. The interview can happen face-to-face, via telephone, or via video conferencing (i.e. skype). The interview will be audio recorded. Interviews will be 60 to 90 minutes in length in a location to be determined by the interviewees and the principle investigator.

After the collected data is transcribed and analyzed, participants will have the opportunity to review the analysis and confirm or clarify the meaning of the results through a process called member-checking.

Thank you so much for your time and willingness to participate. Your contribution is greatly appreciated.



Appendix C

Interview Protocol (One-on-One)

Interview Protocol (one-on-one)

Pseudonym _____

Gender	___Male	___Female
Race/Ethnicity	___White/European American	___Black/African American
	___Asian American	___Native American
	___Pacific Islander	
Are you Hispanic?	___Yes	___ No

Your year in your program ___1st ____2nd ___3rd ___4th ___5th ___6th ___beyond

Interview Questions

1. Please explain your experiences with research mentoring at this university.
2. Please discuss your confidence level in your ability to complete your required research and research in your post-doctoral development.
3. Do you believe mentoring experiences has contributed to your ability to conduct research? If so, how?
4. How do you feel you have been provided opportunities to build your research ability based on your perception of your university's/department's research climate?
5. Has your relationship with faculty members increased your abilities and desires to do research?
6. Have you been encouraged by faculty mentors to pursue your own research interests?
7. Describe your personal research efforts? How has your mentor or department supported your efforts?
8. Please describe any faculty member that you would consider a academic or research role model.

Thank you for your time. Please feel free to take this time to discuss any other additional experiences in relation to our discussion.

Appendix D

Interview Protocol (Group Interview)

Interview Protocol (group interview)

Pseudonym _____

Gender	___Male	___Female
Race/Ethnicity	___White/European American	___Black/African American
	___Asian American	___Native American
	___Pacific Islander	
Are you Hispanic?	___Yes	___ No

Your year in your program ___1st ____2nd ___3rd ___4th ___5th ___6th ___beyond

Interview Questions

1. Just to make us all more familiar with one another, please tell us a bit about yourself.
2. Please explain your experiences with research mentoring at this university.
3. Please discuss your confidence level in your ability to complete your required research and research in your post-doctoral development.
4. Do you believe mentoring experiences has contributed to your ability to conduct research? If so, how?
5. How do you feel you have been provided opportunities to build your research ability based on your perception of your university's/department's research climate?
6. Has your relationship with faculty members increased you abilities and desires to do research?
7. Have you been encouraged by faculty mentors to pursue your own research interests?
8. Describe your personal research efforts? How has your mentor or department supported your efforts?
9. Please describe any faculty member that you would consider a academic or research role model.

Thank you for your time. Please feel free to take this time to discuss any other additional experiences in relation to our discussion.

Appendix E

HBCUs in the State of Virginia and Degrees Offered

National Center for Education Statistics

College Navigator

Name	Website	Type	Awards offered
Hampton University	www.hamptonu.edu	4-year, Private not-for-profit	One but less than two years certificate;Associate's degree;Two but less than 4 years certificate;Bachelor's degree;Master's degree;Post-master's certificate;Doctor's degree - research/scholarship;Doctor's degree - professional practice
Norfolk State University	www.nsu.edu	4-year, Public	Associate's degree;Bachelor's degree;Master's degree;Doctor's degree - research/scholarship;Doctor's degree - professional practice
Saint Pauls College	www.saintpauls.edu	4-year, Private not-for-profit	Bachelor's degree
Virginia State University	www.vsu.edu	4-year, Public	Associate's degree;Bachelor's degree;Postbaccalaureate certificate;Master's degree;Doctor's degree - research/scholarship
Virginia Union University	www.vuu.edu	4-year, Private not-for-profit	Bachelor's degree;Master's degree;Doctor's degree
Virginia University of Lynchburg	www.vul.edu	4-year, Private not-for-profit	One but less than two years certificate;Associate's degree;Bachelor's degree;Master's degree;Doctor's degree